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Environmental Impact Report

388 Market Street Building

FINAL

81.195E

Publication Date: April 9, 1982

Public Comment Period: April 9, 1982 through
May 19, 1982

Public Hearing Date: May 13, 1982

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- Changes from the text of the Draft EIR are indicated by solid dots at the beginning of each revised paragraph or table.

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I. SUMMARY

PROJECT DESCRIPTION: Honorway Investment Corporation proposes to construct a combined office and residential building on Market St. The triangular-shaped 18,360-sq.-ft. site is bounded by Market, Pine, and Front Sts. and is adjacent to the Embarcadero Station of the Market St. subway. The site is centrally located in the downtown area; it is included in the City's C-3-0 (Downtown Office) Use District. Surrounding the project site are primarily high-rise buildings with heights varying from 14 to 38 stories. A total of 15 additional projects of a similar office and/or residential nature have been proposed, approved, or are under construction, in the surrounding blocks.

The 26-story building would be about 375 ft. tall and would provide a total of 342,900 gross sq. ft. of floor area with a total of about 234,500 sq. ft. of office space. The project would include two levels of subsurface parking accommodating about 47 vehicles. Two loading docks, accessible from Front St. would be provided at grade. The first and second floors would contain about 10,000 gross sq. ft. of retail space; the second floor would also contain about 9,300 sq. ft. of office space. There would be a double-height public gallery and separate lobbies for the office and residential portions of the building.

The third to 18th floors would contain about 225,200 gross sq. ft. of office space. The 19th floor would contain mechanical equipment and about 3,800 sq. ft. of space for an athletic health club to serve as a common facility for residents and employees of the building. The top seven floors would include a total of about 57 market-rate condominium units, as well as some mechanical service areas. The gross floor area for the residential portion of the building would be about 85,900 sq. ft. There would be a rooftop observation deck. Private balconies for the condominiums would satisfy the useable open space requirements of the City Planning Code for residential use.

The building base would be triangular in form. A building setback would be provided above the second floor, at a height of about 40 ft. This setback would provide pedestrian scale on Market St. Above this setback, a rounded, semi-circular frontage would be located along Front St. A recess would be formed in the building tower at the midpoint of both the Market St. and Pine St. facades. The building would narrow approaching the intersection of Pine and Market Sts. with the "prow" oriented towards the foot of Market St.

The proposed building would have a public gallery, widened sidewalks and multiple building entrances. These features are intended to shorten walking distances and improve pedestrian access to work, retail and residential spaces and to transit facilities. The entry plazas and public gallery would be landscaped.

- Construction is expected to begin in early 1983 and to be completed in 20 months; initial project occupancy is scheduled for late 1984, with full occupancy expected during 1985. Development costs (including land cost) would be about \$66.4 million (1981 dollars).
- ENVIRONMENTAL SETTING: The site is occupied by two buildings: 320 Market St. and 340 Market St. The 320 Market St. building is nine stories tall with a drugstore on the ground level and eight floors of office space. The 340 Market St. building is eight stories tall with a subsurface parking garage accomodating about 42 passenger vehicles; the building contains a savings bank and a men's clothing store on the ground-level and seven floors of office space. Businesses on the site employ about 600 persons.

The site is served by Muni and BART. Passenger pick-up points for A-C Transit, SamTrans, Golden Gate Transit, and Southern Pacific Transportation Company (railroad) are within several blocks of the site. About 13,000 off-street public parking spaces are located within 2,000 ft. of the site.

ENVIRONMENTAL IMPACTS: Issues requiring no further study as determined in the Final Initial Study for the project (see Appendix A, p. 244) include: land use compatibility, operational noise, biology, construction-related air quality, public services, health hazards, and cultural and historic factors.

Land use and zoning. (See Section IV, p. 55.) Land use would be similar to the present site use except for the provision of housing, which is consistent with evolving City policy. The project would be consistent with the San Francisco Comprehensive Plan and policies stated for the C-3-0 district. The building height would be about 225 ft. less than the maximum of 600 ft. permitted. The building length and diagonal measurement would each be 220 ft., exceeding the maximum permitted length and diagonal dimension of 170 ft. and 200 ft., respectively.

The total gross floor area for the building would be approximately 342,900 sq. ft., representing a Floor Area Ratio (FAR) of 18.7:1; this exceeds the basic FAR of 14:1 permitted under Section 124 of the City Planning Code. Floor area bonuses allowed under Section 126 of the City Planning Code could permit space in addition to the basic FAR. Permitted bonus space could be used only for residential uses under the existing Interim Controls on downtown high-rise office development (Municipal Ordinance 240-80, effective June 1, 1980). Requested bonus space of about 85,900 sq. ft. would result in a total gross floor area for the building of about 342,900 sq. ft.

The project as proposed is inconsistent with the Department of City Planning document entitled, Guiding Downtown Development (GDD), in the following aspects: it exceeds the GDD recommendation for a maximum commercial FAR of 12:1, by 2:1; and the transfer of bulk provisions contained in GDD to reduce the size of upper floors would not be met by the project. The project would be generally consistent, however, with the GDD policy to provide retail space on the ground floor and with the GDD additional FAR for on-site housing of 5:1 (project residential FAR would be 4.7:1).

Employment, housing and fiscal. (See Section IV, p. 75.) A total of 980 permanent jobs would be provided by the project, a net increase of 380 positions. The multiplier effect would provide an additional 440 jobs in other sectors of the economy. The project would require about 250 person-years of construction labor; an average of about 150 full-time jobs during the 20-month construction period. The multiplier effect on construction jobs would result in 400 additional person-years of employment during the construction period. The office space would contribute to the

growing amount of office development available in the downtown area. The 57 condominium units would be insufficient to meet the net housing demand from the project's employees that would live within San Francisco. The market-price of these units would be above the purchase capabilities of about 70 percent of the employees that would work within the proposed building. Revenues to the City would increase in proportion to the increase in floor space and employment on the project site; additional demand for City services generated by the project would produce costs to the City.

- Other impacts. The site vicinity is heavily shaded by existing high-rise buildings. No public parks would be shaded by the proposed building; during winter afternoons, the project would contribute to shadow patterns on the plaza of the 101 California St. building. The project would generate a gross demand for about 410 parking spaces and a net demand for about 185 spaces; about 40 existing parking spaces would be removed and about 47 new spaces provided as part of the project. That the project would not meet the parking demand is consistent with the overall policy contained in the Revisions to the Transportation Element of the Master Plan to discourage the addition of new long-term parking spaces in the downtown. The two off-street loading spaces proposed would conform to the number required by the City Planning Code and City Planning Commission Resolution No. 9286. The loading stalls would comply with the dimensions required by the Code, but would not meet the minimum dimensions required by Resolution No. 9286. Project-related air emissions would have no measureable impact on local or regional air pollutant concentrations; however, the project would contribute to impacts from cumulative downtown development. Construction noise, especially piledriving, would create noise intrusions affecting office activities in buildings closest to the site. Because of the greater floor space and the number of employees and residents on the site, energy demands would increase. The use of energy would be controlled so that, in comparison to the present buildings on the site, the new building would be more energy efficient and would use less energy per sq. ft. Dewatering of the site would result in the discharge of about 15 million gallons of water into the existing storm drain system over a period of seven months during project construction.

MITIGATION MEASURES: (See Section V., p. 118.) Mitigation measures which are specific to the proposed project and not required by governmental statutes or laws include: relocation assistance to the existing tenants with long-term leases; provision of a transportation broker who would encourage the use of transit systems; bicycle parking and access facilities for the handicapped; preferential parking for car pool and van pool vehicles; incorporation of energy saving devices and equipment into the building; provision of internal security measures and alarms; and, features to conserve water and collect solid waste for recycling purposes.

ALTERNATIVES TO THE PROPOSED PROJECT: (See Section VIII., p. 130.) Six alternatives to the proposed project have been considered by the sponsor.

Alternative One would provide on-site housing at about the rate of 640 sq. ft. of residential use per 1,000 sq. ft. of office space, as encouraged by Guiding Downtown Development (GDD). This alternative would have a design similar to the proposed project and would have the same parking, retail and office floors as proposed. The residential floor area would not be consistent with identified bonus space and would not conform to the City Planning Code; modification of the Code would be required to allow approval of this alternative. Alternative One would be about 430 ft. tall, and contain 30 stories. The number of condominium units would increase to about 90, in comparison to about 57 for the project. This alternative would contain a total of about 401,000 sq. ft. for an FAR of 21.8:1, compared to the proposed FAR of 18.7:1. Urban design, shadow and energy use effects would be increased because of the greater size of Alternative One in comparison to the project. An amendment to the City Planning Code which could allow the amount of on-site housing proposed for this alternative would encourage the provision of additional on-site housing in future high-rise development. The project sponsor would develop this alternative if the Planning Code were modified to permit it.

Alternative Two incorporates the basic FAR of 14:1 with the pre-Interim Controls bonuses for additional office space. Alternative Two would be 26 stories tall and about 375 ft. tall. No residential use would be provided on the site. About 342,900 sq. ft. of commercial space representing an FAR of

18.7:1 would be provided. This alternative would be similar to the project in design and form and would contain the same dimensions as the project. There would be one level of subsurface parking and two loading docks. The building would contain two floors of retail space, 23 floors of office use and a mechanical service floor. Alternative Two would not satisfy any housing demands which would be generated by on-site office space. Alternative Two would have increased impacts in comparison to the proposed project for the office use; residential use impacts would be eliminated. This alternative has been rejected because it does not comply with the limitations on the use of floor area bonus required by the Interim Controls.

Alternative Three would be designed to comply with the guidelines contained in GDD. A 24-story combined office and residential building 340 ft. tall and having 220,000 gross sq. ft. of office and commercial space would be provided. Alternative Three would have an FAR of 12:1 for the office/commercial uses, compared to 14:1 for the project. Residential use would be increased to 91,800 gross sq. ft. for an FAR of 5:1, resulting in the provision of about 61 residential units. The additional GDD recommended housing requirement of about 42,600 sq. ft. would be constructed off-site. One level of subsurface parking and three loading docks would be provided. Artwork would be included in the public gallery. Residential open space would be provided by private balconies for individual condominiums; in addition, this alternative would partially satisfy the GDD requirement to provide recreation and open space for the commercial portion of the building. The impacts of this alternative would be similar to the proposed project, however the building would contain two fewer stories and about 31,100 sq. ft. less floor area. The project sponsor has rejected Alternative Three as not providing the amount of office space permitted under the City Planning Code.

Alternative Four would comply with the City Planning Code in all respects. This alternative would contain about 257,000 gross sq. ft. of commercial space for an FAR of 14:1. Alternative Four would be about 315 ft. tall and contain 22 stories. There would be two levels of retail space containing a total of 10,000 sq. ft., 19 floors of office use, and a mechanical floor. There would be no off-street parking and no residential development on the site; no bonus floor area would be used. The building tower would be reduced to 170 ft. in

length and 200 ft. in maximum dimension to conform with the bulk provisions of the City Planning Code. Impacts of the office use under this alternative would be the same as those described for the proposed project. Residential use impacts would be eliminated. Alternative Four would not satisfy any portion the housing demand generated by the office use and, for this reason, has been rejected by the project sponsor.

Alternative Five would develop a 25-story combined office and residential building approximately 365 ft. tall. This Alternative would feature access to all loading and off-street parking on Pine St., rather than on Front St. as proposed for the project. Alternative Five would contain about 257,000 gross sq. ft. of commercial space for an FAR of 14:1. Residential space would occupy about 80,600 sq. ft., about 5,300 sq. ft. less than proposed in the project, for an additional FAR of about 4.4:1. This alternative would contain a total of about 337,600 sq. ft. for an overall FAR of about 18.4:1. There would be one level of retail space and 17 floors of office space. The 19th floor would contain mechanical equipment and an athletic health club. There would be six floors of residential use containing 54 condominiums, three fewer than for the project. Under this alternative there would be two levels of subsurface parking and two loading docks. The impacts of this alternative would generally be similar to those described for the proposed project except that conflicts between pedestrians and vehicles would be reduced by about 25 percent because ramps to the parking garage and loading docks would be on Pine St. where pedestrian traffic is light. Alternative Five has been rejected by the project sponsor because it would not permit two levels of retail use and a double height public gallery connecting Pine and Market Sts. and because it would not provide the amount of bonus floor area for residential use which may be requested with the preferred project design.

Alternative Six is the no project alternative. Should this alternative be implemented, the site conditions and uses will remain the same. Long-term use of the site would be uncommitted. This alternative could result in the development of office space comparable to the project at another location. This alternative has been rejected by the project sponsor because of the firm's association with the City of San Francisco, existing interests in the site and the sponsor's conviction that the project site is a prime location for housing in the City.

I. Summary

- Alternative seven would develop a structure identical to the project with the exception of the location of the observation deck and the numbering of floors. The impacts of this alternative would generally be the same as those of the project.

II. PROJECT DESCRIPTION

A. PROJECT SPONSOR'S OBJECTIVES

The project sponsor, Honorway Investment Corporation, a California corporation, proposes to construct a 26-story combined office and residential building on Market St. (see Figure 1). The sponsor's objectives are to construct a high-quality commercial office building, increase the City's housing supply by providing on-site housing, and realize a reasonable return on investment. The project is intended to satisfy some of the existing demand for both office space and housing in San Francisco. The project sponsor intends to develop an energy-efficient building which architecturally would complement adjacent high-rise structures. The project architect is Skidmore, Owings and Merrill of San Francisco.

B. PROJECT LOCATION

The 18,360-sq.-ft. project site includes Lots 1 and 2 which comprise Assessor's Block (A/B) 265. This triangular block is bounded by Market, Pine and Front Sts. and is adjacent to the Embarcadero Station of the Market St. subway (see Figure 13, p. 28). It is located within the City's C-3-0 (Downtown Office) Planning Code Use district.

C. PROJECT DESCRIPTION

- The project would be a 375-ft. high, 26-story building, with about 342,900 gross sq. ft. of floor area, excluding foundation, mechanical and parking space (see Figure 2 and 2a, pp. 11 - 11a)./1/ There would be two levels of subsurface parking containing about 22,300 net sq. ft., and accommodating about 47 passenger vehicles. The parking levels would be accessible by a single lane ramp from Front St. There would be a direct connection from the

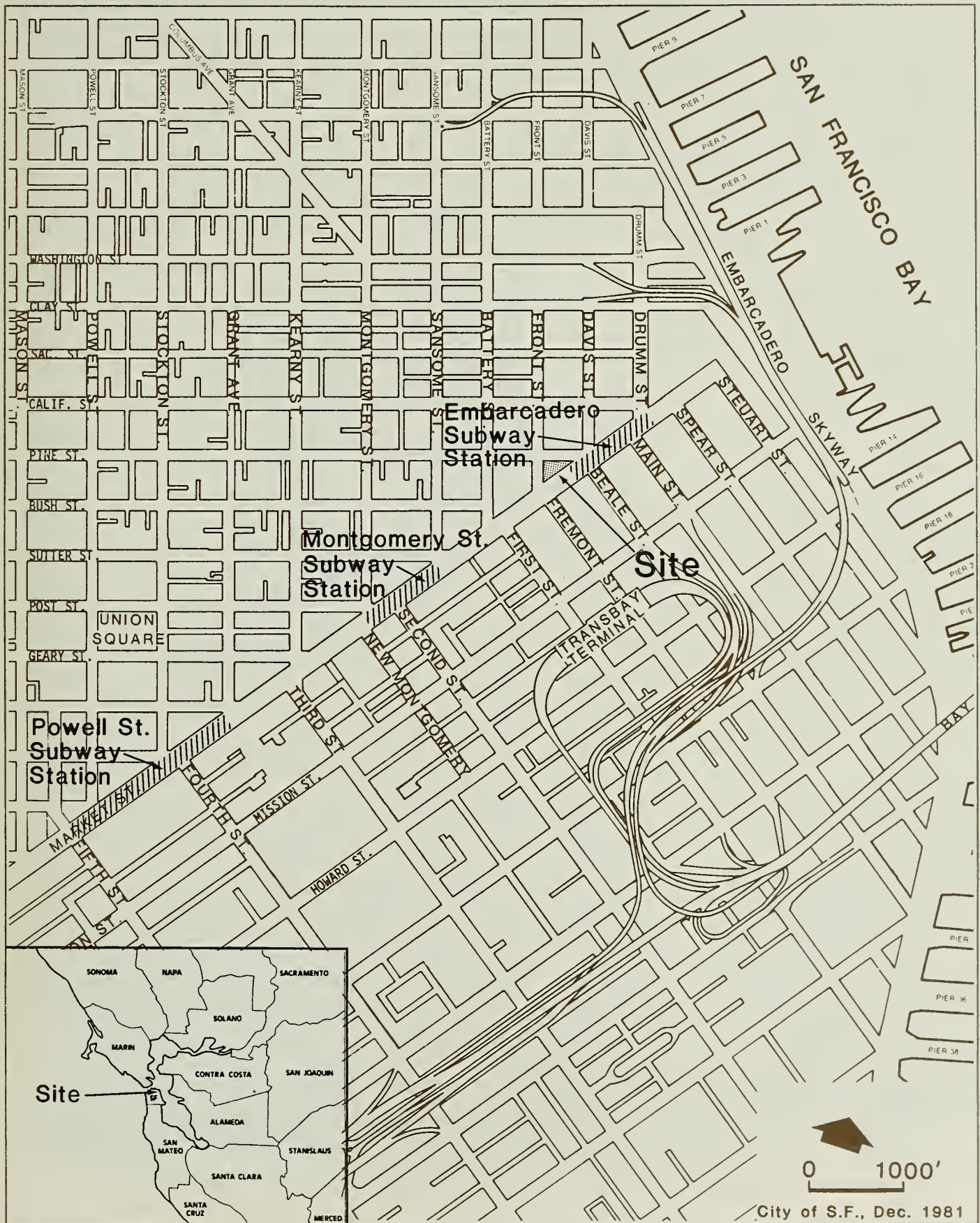


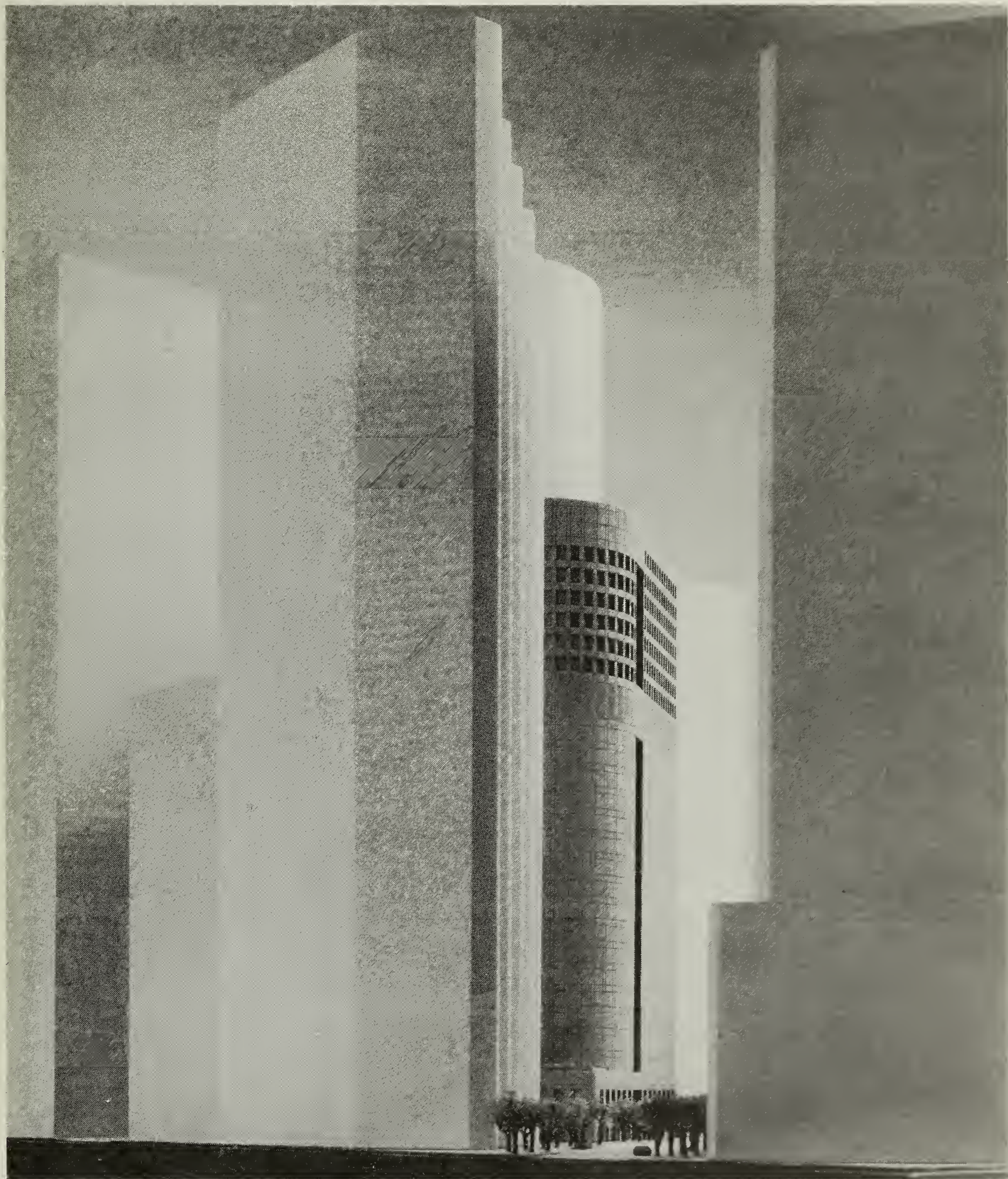
FIGURE 1: Project Location

SOURCE: Environmental Science Associates, Inc.

II. Project Description

lower basement level of the project to the mezzanine of the Embarcadero Station of the Market St. subway; access would be provided via shuttle elevators serving the parking facility and first two floors of the building (see Figure 3, p. 12). Two loading docks, accessible from Front St., would be provided at grade. The main building entrances, located on Market and Pine Sts., would be connected by a 25-ft. wide, double-height public gallery, open to the second floor (see Figures 4 and 5, pp. 13 - 14). There would be separate lobby and elevator access to the residential and office portions of the building. Total lobby, elevator and public area on the first two floors would be about 12,500 gross sq. ft. Retail space totaling about 10,000 gross sq. ft. would be located on the first and second levels. The second floor would also include about 9,300 gross sq. ft. of office space.

The third through 18th floors would contain about 225,200 gross sq. ft. of office space. The average gross floor area for the office floors would be about 14,100 sq. ft. (see Figure 6, p. 15). The office, lobby, and retail portions of the building would rise to a height of approximately 248 ft. The 18th floor, containing mechanical equipment and an athletic health club, would be a transition floor between the office and residential portions of the building. The health club, containing about 3,800 sq. ft., would serve as a common facility for residents and employees of the building (see Figure 7, p.16). The seven floors from the 19th through 26th would be occupied by about 57 residential condominium units (see Figure 8, p. 17). About half of the space on the 26th floor would be devoted to mechanical services, resulting in six and a half floors of residential use. Gross floor area for the residential portion of the building would be about 85,900 sq. ft. There would be a rooftop observation deck, containing about 350 sq. ft. (see Figure 9, p. 18). The observation deck, accommodating about 50 persons would be reached via the residential elevators. The observation deck would be opened to the public during normal business hours; access would be monitored and controlled by a security guard at the ground floor. Open space for project residents would be provided by private balconies for individual condominiums, containing a minimum of about 3,400 sq. ft. in total, to satisfy the residential open space requirement of Section 135 of the City Planning Code.



▲
111 Pine St.

▲
444 Market St.

▲
PROJECT

▲
Mutual Benefit
Life

▲
One Metropolitan
Plaza Bldg.

● FIGURE 2: Photo of the Model Looking East on Market St.

SOURCE: Skidmore, Owings & Merrill



▲
333 Market St.

▲
444 Market St. PROJECT

▲
101 California St.

● FIGURE 2a: Photo of the Model Looking West on Market St.

SOURCE: Skidmore, Owings & Merrill

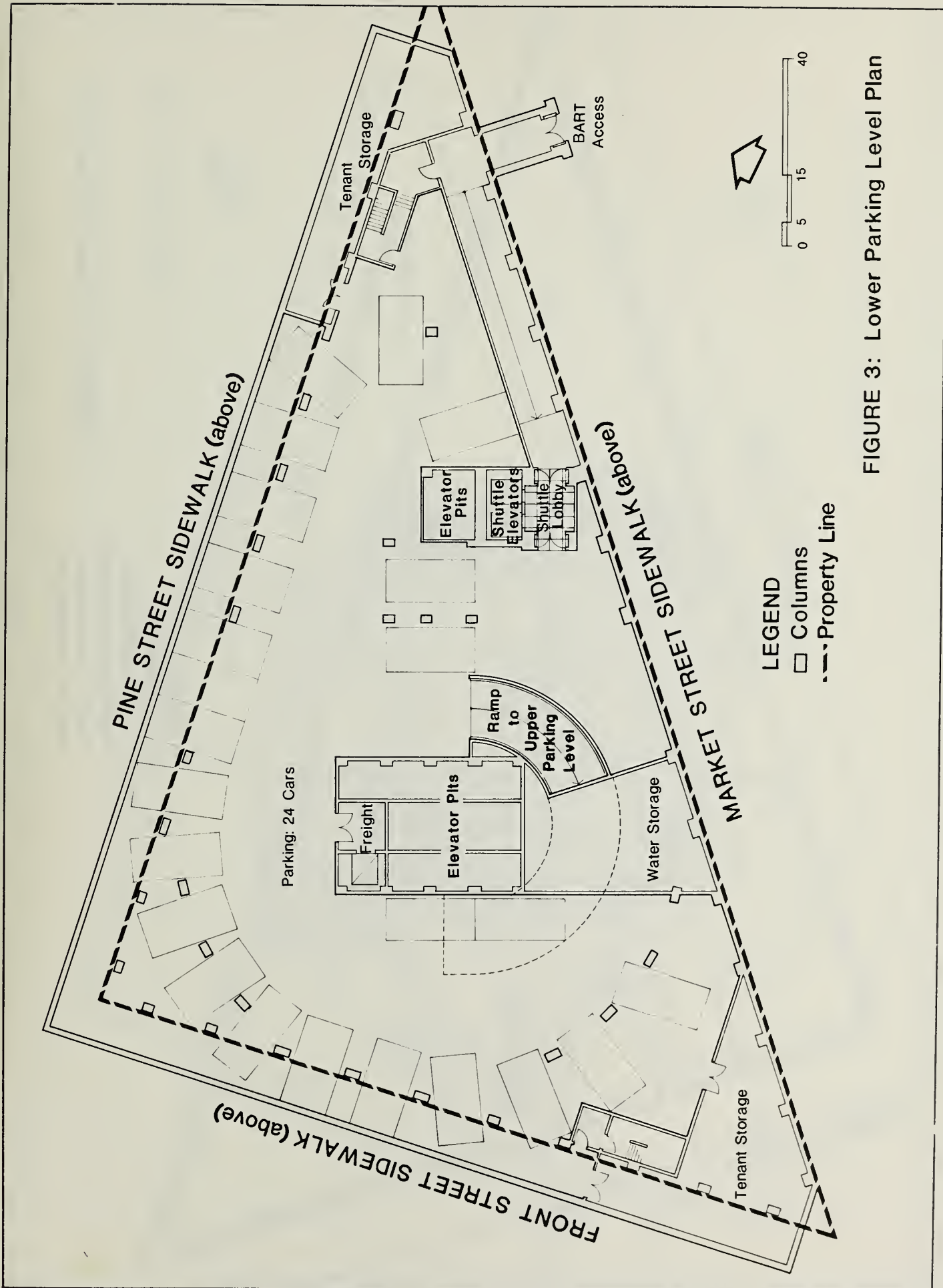


FIGURE 3: Lower Parking Level Plan

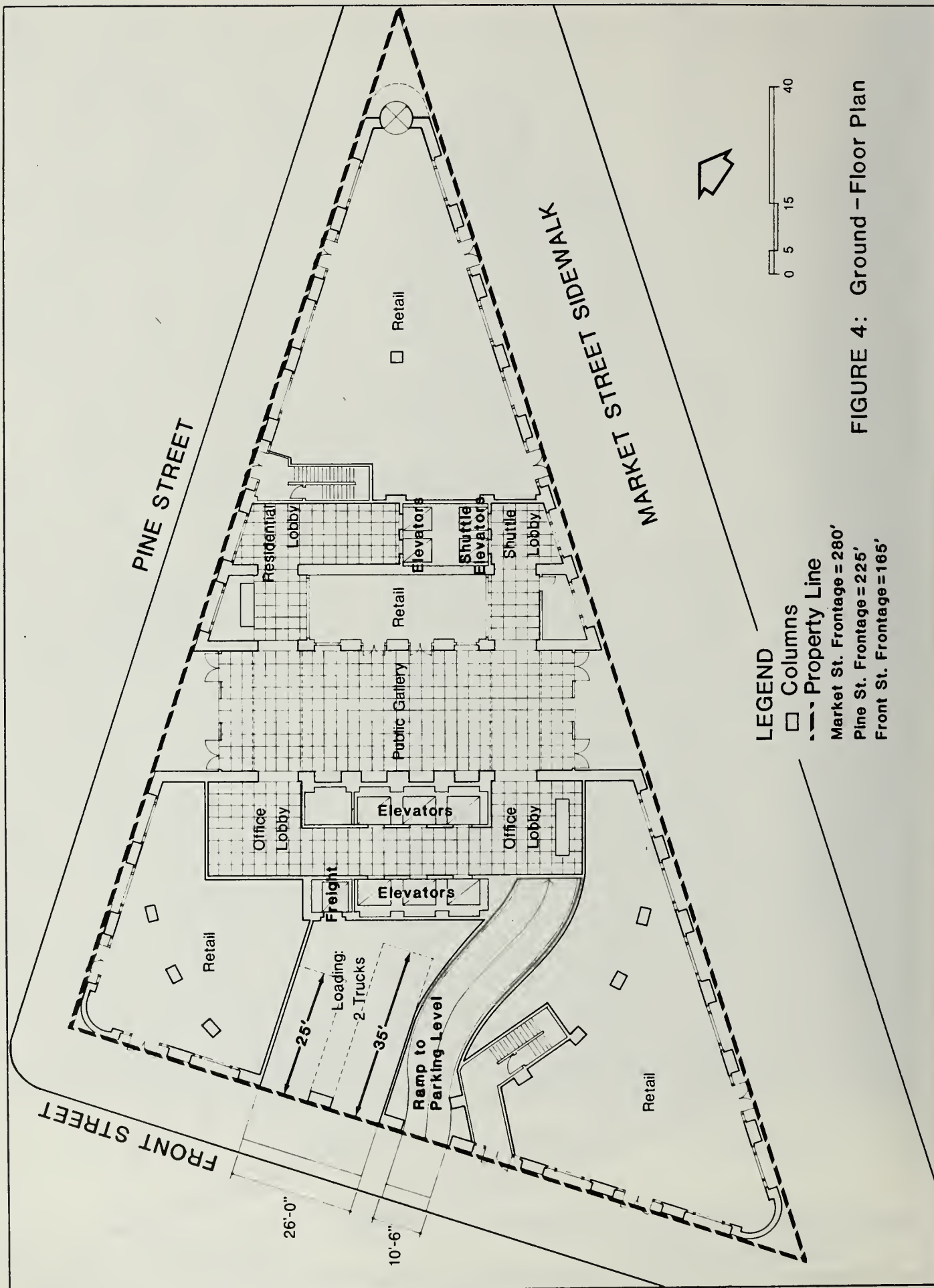


FIGURE 4: Ground - Floor Plan

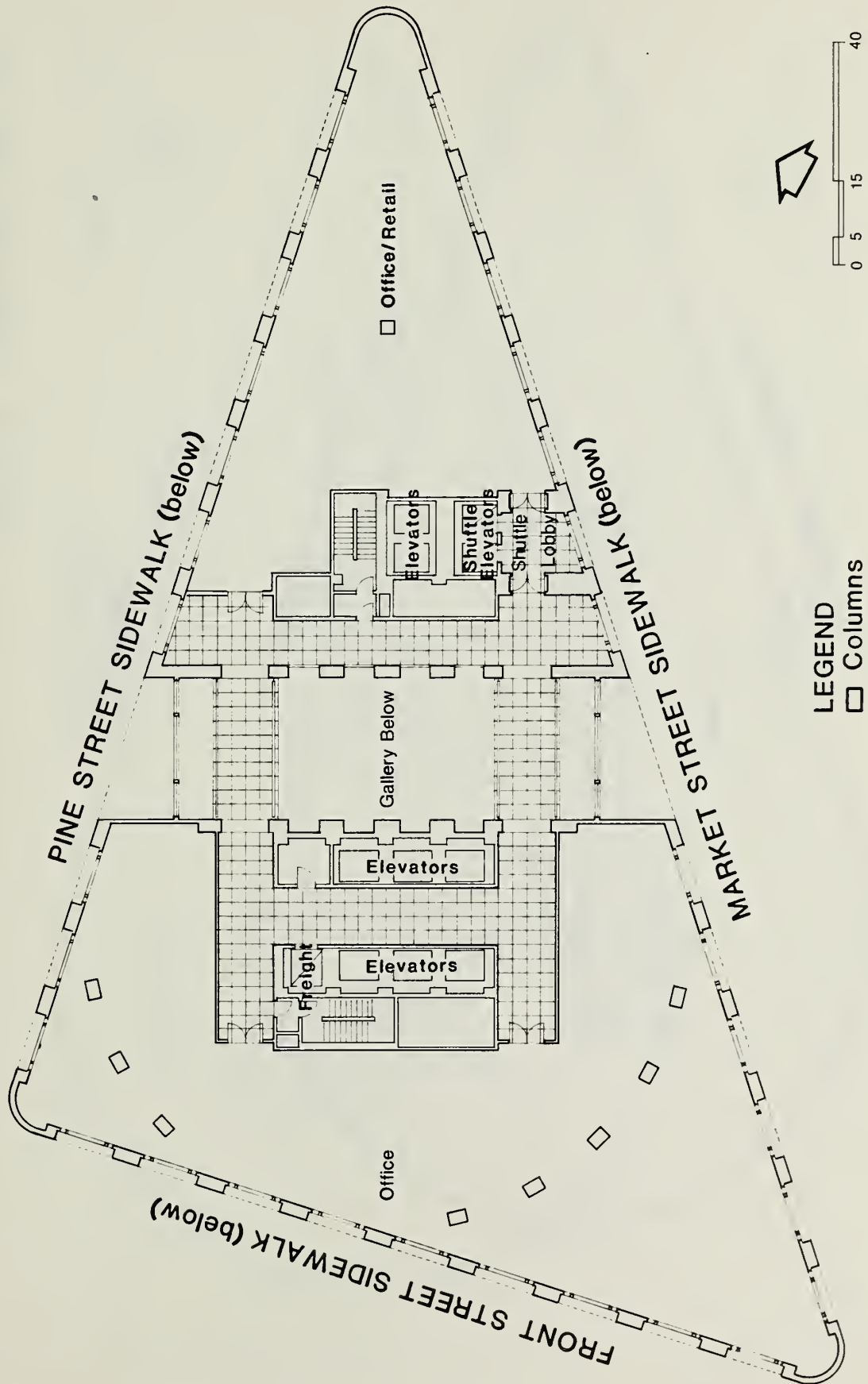


FIGURE 5: Second-Floor Plan

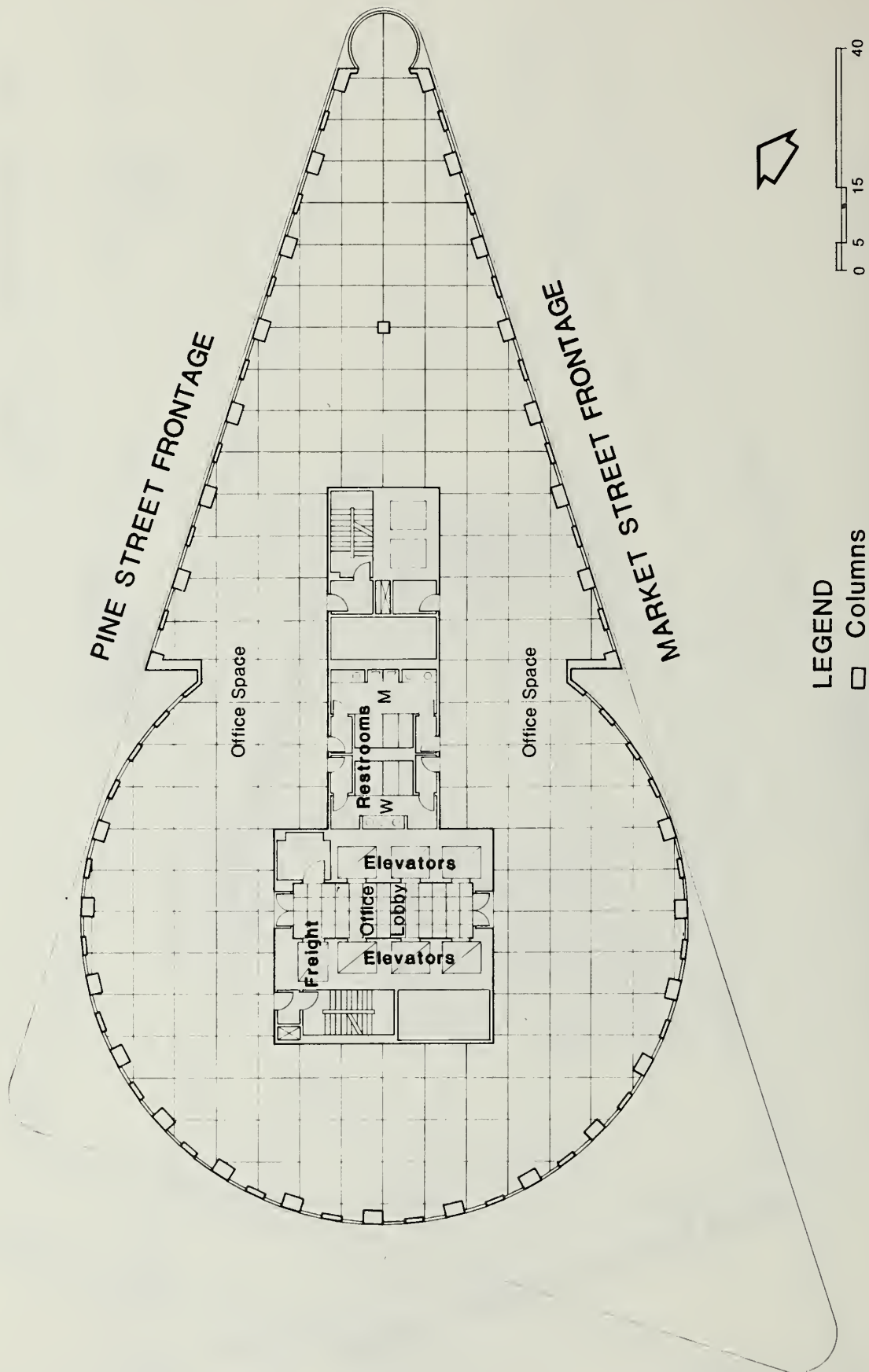


FIGURE 6: Typical Office Floor Plan

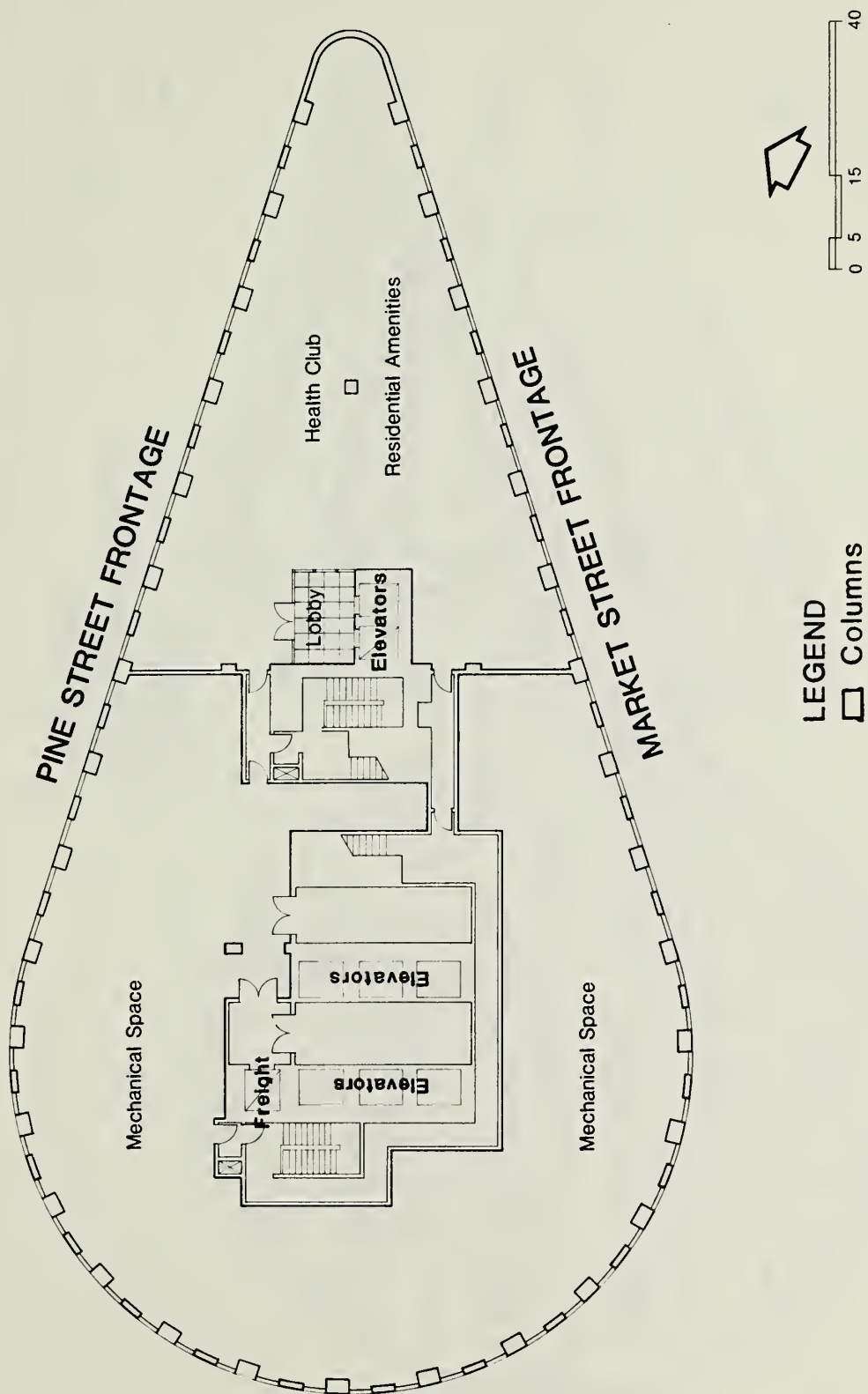
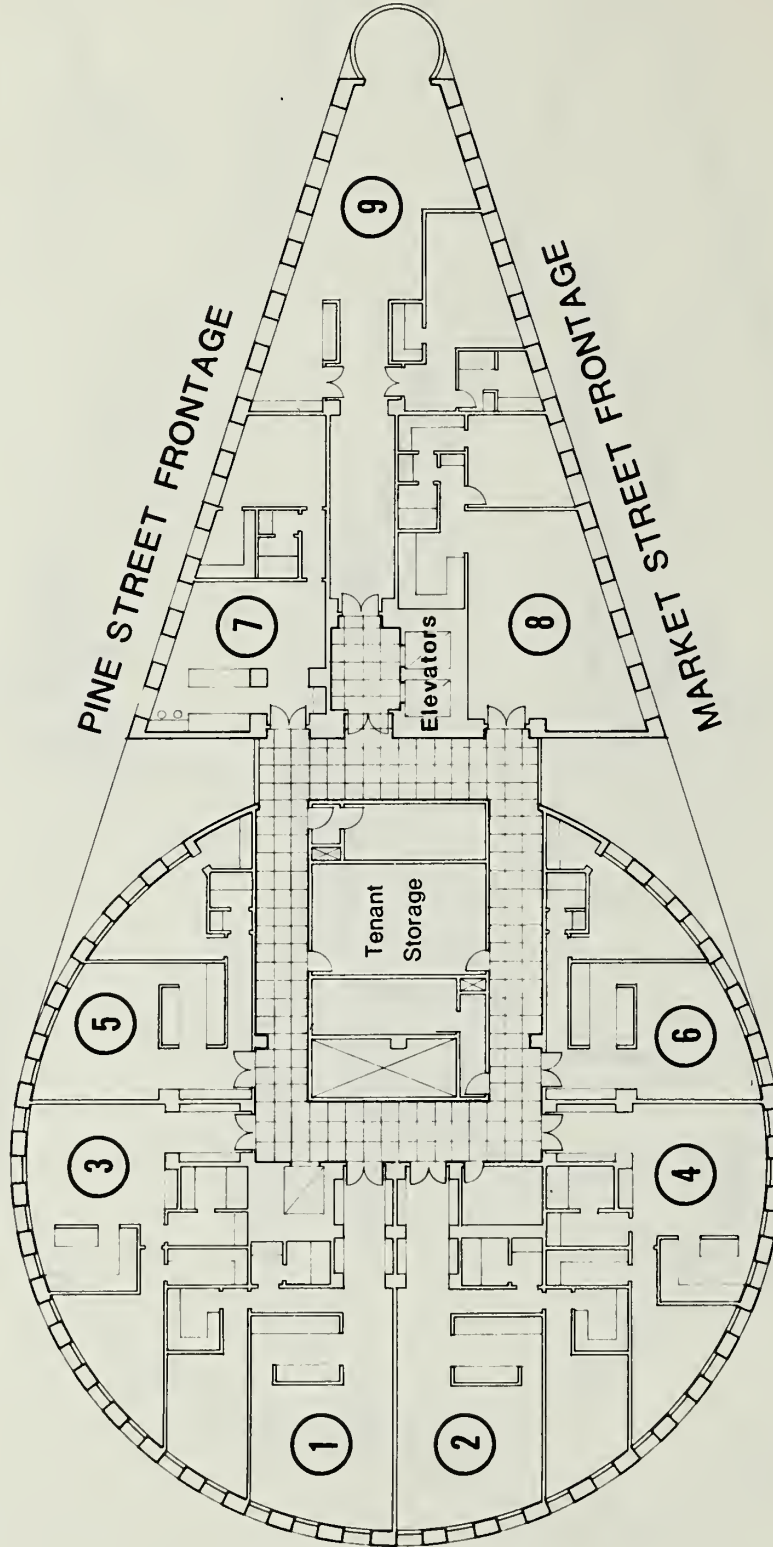


FIGURE 7: 19th Floor Plan



LEGEND

⑤ Residential Units

□ Columns

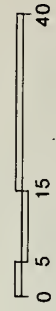
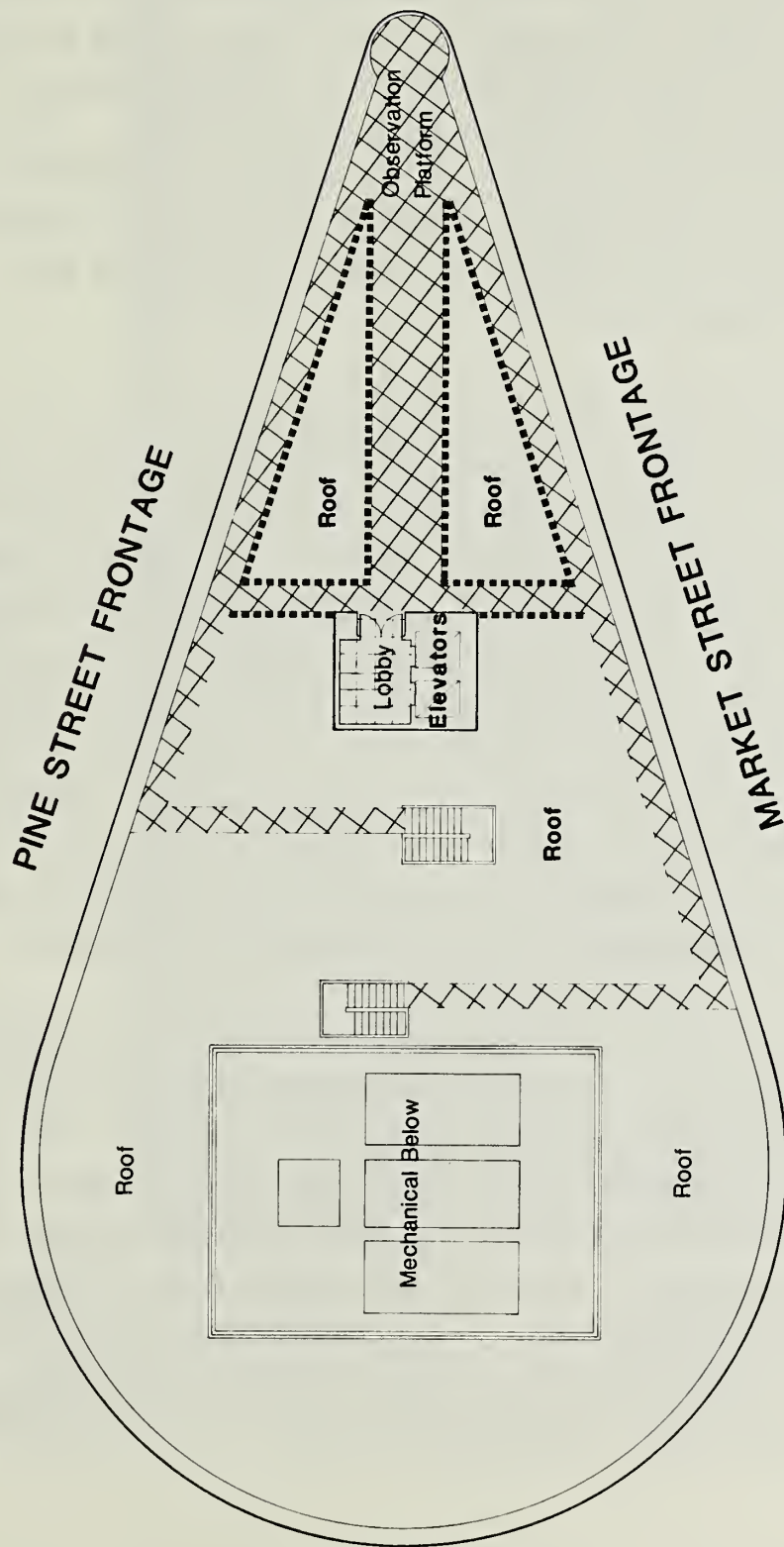


FIGURE 8: Typical Condominium Floor Plan



LEGEND

- Public Area
- railing

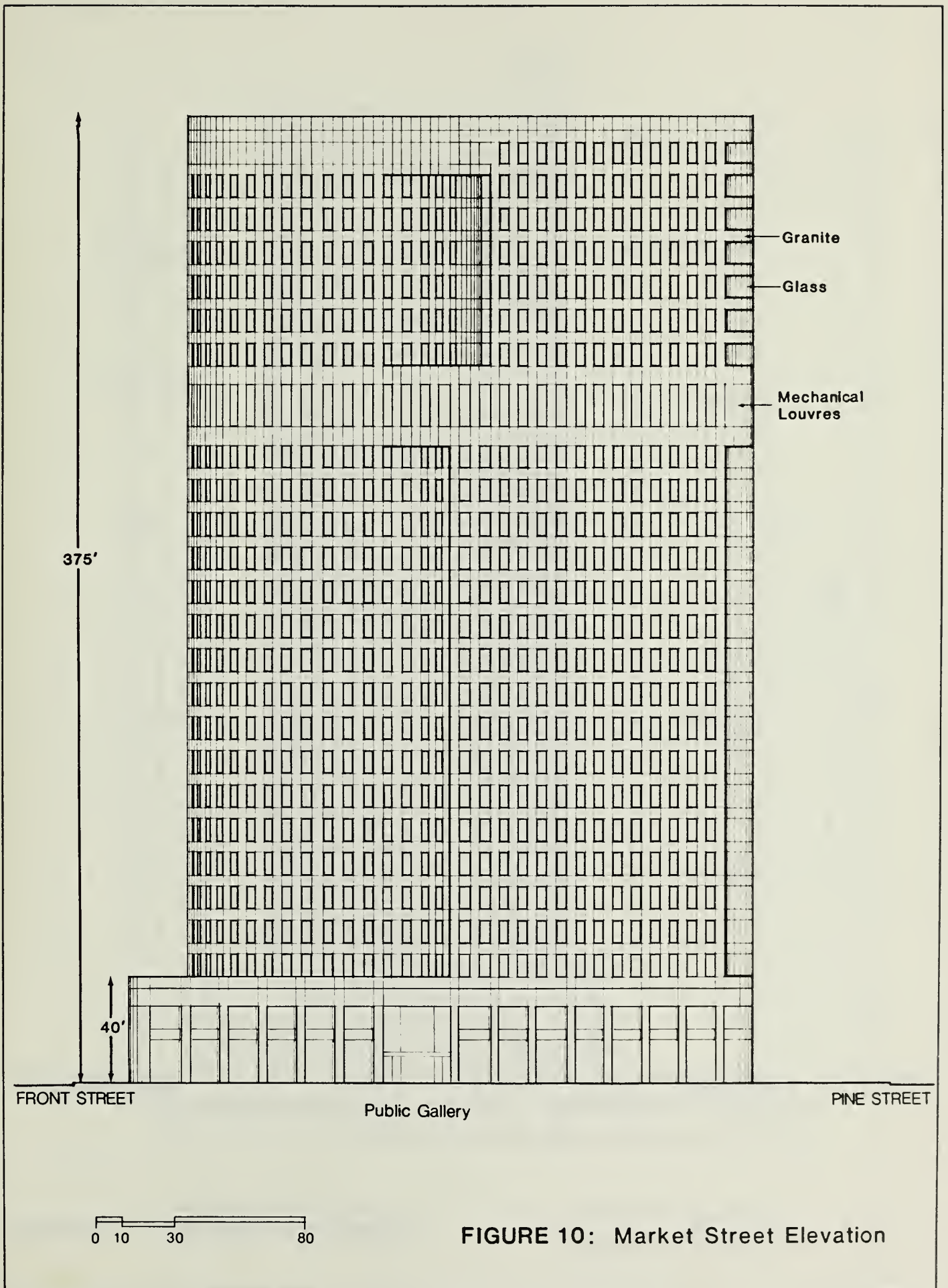
FIGURE 9: Roof Floor Plan

II. Project Description

The lower two stories of the building would form a triangular base, 40 ft. in height (see Figures 10 and 11, pp. 20 - 21). The base is intended to provide pedestrian scale on Market St., particularly when viewed from the 333 Market St. Plaza, opposite the site. The setback at 40 ft. would relate to the bases of four structures on the south side of Market St.: the PG&E, Matson, Federal Reserve Bank (under construction) and Southern Pacific buildings. The project base would be rounded at all three corners. The facade of the project would be approximately 35 percent glass and 65 percent granite. Both clear and green-tinted glass are under consideration; the granite treatment and coloration have not yet been determined.

The project tower would be about 375 ft. tall (see Figure 12, p. 22). Above the setback at the 40 ft. level, a rounded, semi-circular frontage would be located along Front St. A recess would be formed in the building tower at the midpoint of both the Market St. and Pine St. facades (see Figures 6 and 8, pp. 15 and 17). The building would narrow approaching the intersection of Pine and Market Sts. with the "prow" oriented towards the foot of Market St. This indentation to extend the circular form is intended by the architect to promote visual interest and reduce building bulk. The proposed building would have a public gallery, widened sidewalks and multiple building entrances. These features are intended to shorten walking distances and improve pedestrian access to work, to retail and residential spaces and to transit facilities. The entry plazas and public gallery would be landscaped.

Gross floor area of the lobby, retail and office space would be approximately 257,000 sq. ft., representing a basic Floor Area Ratio (FAR) of about 14:1. The project plans include about 85,900 gross sq. ft. of housing. The square footage of the proposed residential units would cause the building to exceed the basic FAR, permitted under Section 124 of the City Planning Code, for a structure in the C-3-0 District. The total gross floor area for the building would be approximately 342,900 sq. ft. (excluding foundation, mechanical, and parking floor area), representing a total project FAR of about 18.7:1. This would exceed the allowable basic FAR of 14:1 by about 4.7:1, or approximately 85,900 sq. ft.



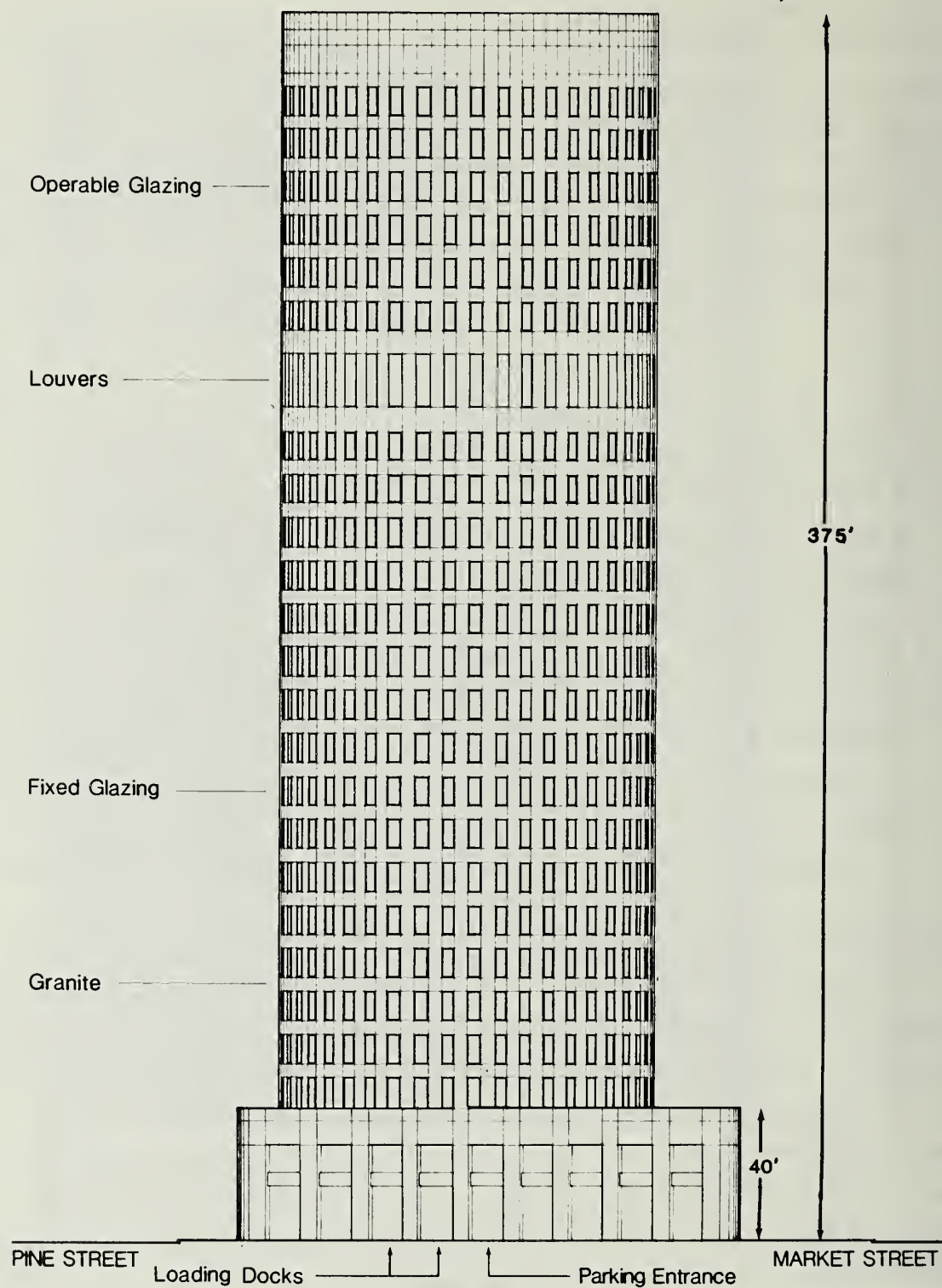
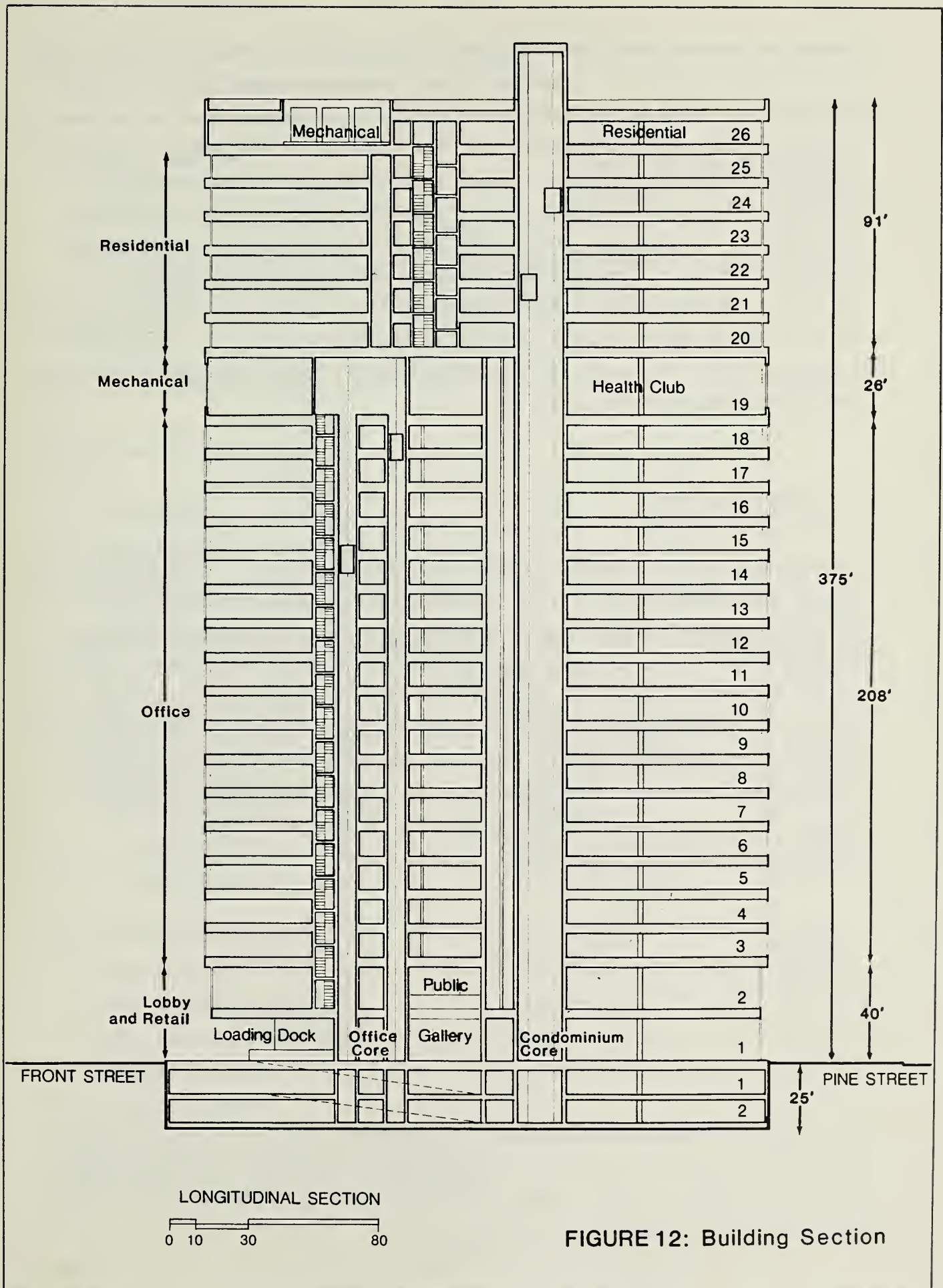


FIGURE 11: Front Street Elevation



The use of bonuses, described in Section 126 of the City Planning Code, could permit space in addition to the basic FAR. Permitted bonus space could be used for, and would be limited to, residential uses under the existing Interim Controls on downtown high-rise office development./2/ The project sponsor intends to apply for a Conditional Use authorization for approximately 85,900 sq. ft. of bonus floor area. This bonus space would be based upon provision of rapid transit access, multiple building entrances, shortened walking distances, sidewalk widening, and a rooftop observation deck (see Table 1). Identified bonus space would result in a total gross floor area for the building of about 342,900 sq. ft., an FAR of about 18.7:1. The project proposes a total of 85,900 sq. ft. of residential space, the amount that the identified bonuses would allow.

D. PROJECT OCCUPANCY

The project sponsor proposes to lease approximately 10,000 gross sq. ft. of retail space on two floors, which is expected to accommodate about four tenants. Commercial retail activities would include a combination of uses such as a bank or savings and loan institution, a small restaurant, apparel store, drugstore, and/or office equipment store. Approximately 234,500 gross sq. ft. of office space is expected to be leased. Tenants are expected to be primarily professional service firms and executive departments of financial institutions and other businesses./3/ The sponsor anticipates that most tenant firms would have a larger proportion of management and professional/technical staff than clerical staff.

TABLE 1: PROJECT CHARACTERISTICS

NUMBER OF STORIES*		HEIGHT AND BULK MEASUREMENTS		
Retail	2		<u>Proposed</u>	<u>Permitted**</u>
Office	16	Height:	375 ft.	600 ft.
Mechanical	1	Length:	220 ft.	170 ft.
Residential	<u>7</u>	Diagonal:	220 ft.	200 ft.
<u>Total Stories</u>	26			

GROSS FLOOR AREA PROPOSED

<u>Use</u>	<u>sq. ft.</u>
Retail and Lobby	22,500
Office	<u>234,500</u>
Total Commerical	257,000
Residential Units	<u>85,900</u>
<u>Total Project</u>	342,000

REQUESTED BONUS SPACE FOR HOUSING (Section 126 of the City Planning Code and Interim Controls)

Rapid Transit Access	51,400 sq. ft.
Multiple Building Entrances	10,000 sq. ft.
Sidewalk Widening	4,800 sq. ft.
Shortened Walking Distances	9,700 sq. ft.
Observation Deck	<u>10,000 sq. ft.</u>
<u>Total Bonus Floor Area</u>	85,900 sq. ft.

FLOOR AREA CALCULATIONS	<u>Floor Area</u>	<u>FAR</u>
Basic Permitted ***	257,000 sq. ft.	14.0:1
Bonus Space Requested	85,900 sq. ft.	4.7:1
Total Permitted by Code	342,900 sq. ft.	18.7:1
Proposed Project	342,900 sq. ft.	18.7:1

*excluding two levels of subsurface parking, containing about 40 spaces

**Section 270 of the City Planning Code

***Section 124 of the City Planning Code

SOURCE: Environmental Science Associates, Inc.

E. PROJECT SCHEDULE, COST AND APPROVAL REQUIREMENTS

PROJECT SCHEDULE

- Detailed project design is scheduled by the sponsor for completion in early 1983. Demolition and site clearance are anticipated to require approximately two months; excavation one month; foundation preparation three months; steel erection six months; and exterior and interior finishing eight months. Interior finishing would be completed within 20 months from the initiation of project construction./4/ Initial project occupancy is scheduled for late 1984, with full occupancy expected in early 1985.

COST

- Project development costs would be about \$66.4 million in 1981 dollars, including \$12 million for land, \$1.4 million for design, engineering and environmental review, \$37 million for basic construction, \$5 million for interior finishing and \$11 million for interim financing and miscellaneous costs. Retail space on the ground floor and second floor is expected to rent for approximately \$42 and \$35 per sq. ft. per year, respectively. Office space is expected to rent for about \$22 per sq. ft. per year. Residential units are expected to sell for about \$200 per sq. ft., or from about \$180,000 to \$366,000 in 1981 dollars./5/

APPROVAL REQUIREMENTS

- Under its policy of Discretionary Review of all downtown high-rise buildings during the period of Interim Controls on the use of floor area bonuses, the City Planning Commission would review, per its Resolution 8474 adopted January 17, 1980, the building design and its environmental context in detail. After a public hearing the Commission would adopt a resolution approving, approving with conditions, or disapproving the project./2/ The project would require a variance from the residential rear yard requirement of Section 134 of the City Planning Code. A Conditional Use authorization would be required by the Interim Controls to permit the use of bonus floor area for residential use on the site. Following project approval by the City Planning

II. Project Description

Commission, the project sponsor would obtain demolition, building, and related permits from the Central Permit Bureau of the Department of Public Works. A revocable encroachment permit, to allow subsurface parking beneath the Pine St. and Front St. sidewalks, would be applied for with the building permit. According to Section 310.1 of the San Francisco Building Code, the encroachment permit application would require approval from the Superintendent and City Engineer. This would occur upon recommendation from the Department of City Planning. Under the State Subdivision Map Act and the City Subdivision Code, preparation and approval of a subdivision map would be required for the proposed residential development.

NOTES - Project Description

- /1/ Photo of the 388 Market Street Building Context Model provided by Skidmore, Owings & Merrill.
- /2/ City Planning Commission Resolution No. 8474, January 17, 1980. Board of Supervisors Ordinance 240-80, June 1, 1980, established the interim limitations on use of bonuses in effect until July 1, 1981. This ordinance was extended, in June 1981, until September 1, 1981 and, subsequently, by Ordinance 34-82, until March 1, 1983.
- /3/ John A. Cecconi, Coldwell Banker - Commercial Real Estate Services, letter communication, October 30, 1981.
- /4/ Alan Rudy, Project Architect, Skidmore, Owings and Merrill, oral communication, October 7, 1981.
- /5/ Kwan So, Honorway Investment Corporation, written communication, October 6, 1981, and personal communication, June 11, 1982.

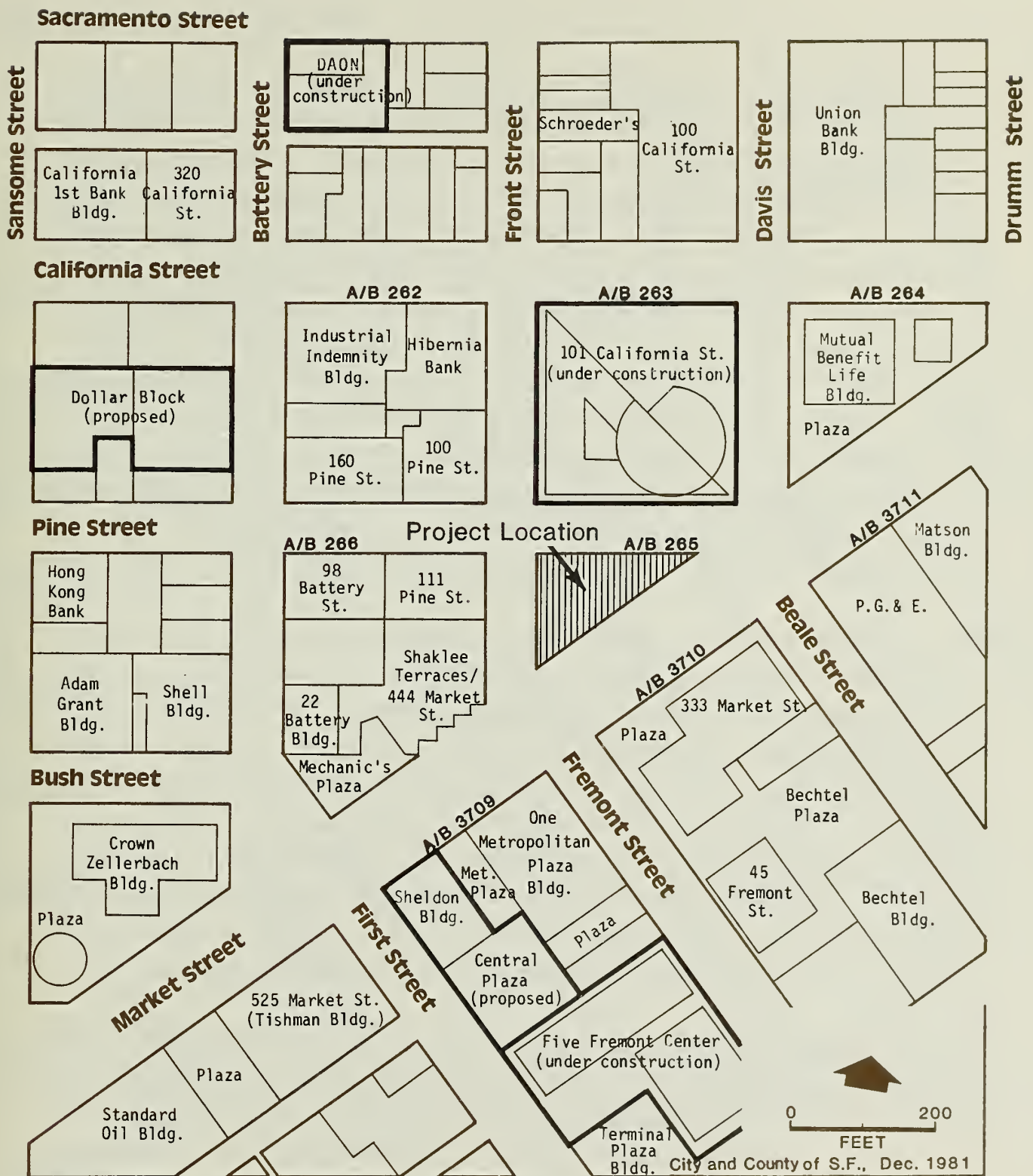
III. ENVIRONMENTAL SETTING

A. LAND USE AND ZONING

- The project site is on Assessor's Block (A/B) 265, is triangular in shape, and is bounded by Market, Pine and Front Sts. The site contains about 18,360 sq. ft. and is presently occupied by two structures, both owned by the project sponsor. The nine-story (112 ft. tall) building at 320 Market St. has a drugstore at the ground level and eight floors of office space above (about 68,400 gross sq. ft. of office space and 11,850 gross sq. ft. of retail space). The eight-story (97 ft. tall) 340 Market St. building contains a subsurface parking garage, a savings bank and men's clothing store on the ground level, and seven floors of office space (about 76,900 gross sq. ft. of office space and 6,700 sq. ft. of retail space, which includes some storage area in the basement). The parking facility contains one level and accommodates about 42 passenger vehicles parked by a garage attendant. The primary office tenants of the 320 and 340 Market St. buildings are Standard Oil of California and Levi Strauss Company, respectively.

North of the site (A/B 263), 101 California St., which will include a 48-story cylindrical office tower, is currently under construction (see Figure 13). The block northeast of the site (A/B 264) includes the 32-story Mutual Benefit Life Building and a freestanding two-story Crocker Bank branch. West of the site (A/B 266), are Mechanics Memorial Plaza at Market and Battery Sts.; 444 Market St., a 38-story office structure; a four-level parking structure on Battery St.; mixed office and retail buildings at 111 Pine St. (19 stories) and 22 Battery St. (11 stories); and 98 Battery St., a five-story structure at the corner of Pine and Battery Sts. Northwest of the site (A/B 262) are the 33-story, 100 Pine St. building; the 14-story Industrial Indemnity Company Building at California and Battery Sts.; 160 Pine St., a seven-story office structure at Pine and Battery Sts.; and the 17-story 201 California building (Hibernia Bank).

South of Market St., opposite the site (A/B 3710), are 333 Market St., a 33-floor office building with a five-story annex, and two office towers owned



Legend



Project Location



Sites Under Development

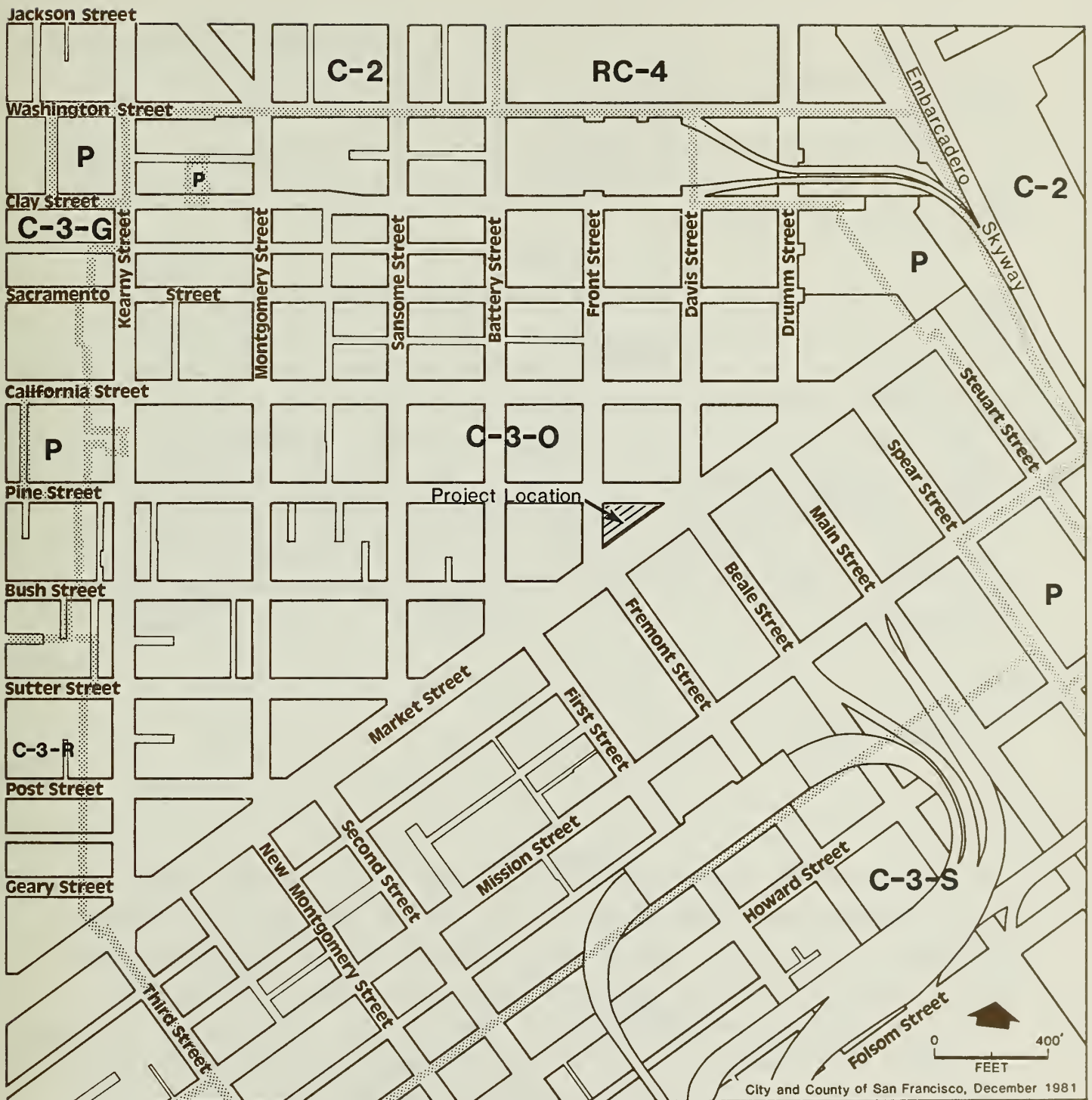
FIGURE 13: Project Site and Vicinity

SOURCE: Environmental Science Associates, Inc.

by the Bechtel Corp., 50 Beale St. containing 23 stories and 45 Fremont St. containing 34 stories. East of the project site, between Main and Beale Sts. (A/B 3711), are the Matson and Pacific Gas and Electric (PG&E) buildings, at 215 and 245 Market St., respectively. Both of these structures are rated "A" in the survey conducted for the Foundation for San Francisco's Architectural Heritage and are included in the City's list of Architecturally and/or Historically Significant Buildings in the Downtown. A parking garage is located at 50 Main St., and a 32-story PG&E building is located at 77 Beale St. On the block southwest of the project site (A/B 3709) is One Metropolitan Plaza, a 36-story office structure; the Sheldon Building at 915 First St., which is rated "B" in the Heritage survey and included in the City's list of Architecturally and/or Historically Significant Buildings in the Downtown; a five-story office building and two vacant six story buildings on First St.; and the site of the 42-story Five Fremont Center, presently under construction.

- The following projects are either proposed, approved, or under construction within three blocks of the project site (see Figure D4, Appendix D, p. 310) and are scheduled to be completed by the end of 1984: 101 California St., Federal Reserve Bank, 150 Spear St., Four Embarcadero Center, Daon at Battery and Sacramento Sts., Pacific Gateway, 1 Sansome St., 5 Fremont Center, 101 Mission St., 25 Jessie St., Spear and Main Sts., 135 Main St., First and Market Sts., 333 California St, 71 Stevenson St., 562 Mission St. and 315 Howard St. These developments, upon full build-out, would provide about 7,760,000 sq. ft. of office space, 290,000 sq. ft. of retail floor space, 100,000 sq. ft. of residential floor area, and 1,025 parking spaces.

The City Planning Code Use classification for the site and surrounding area is C-3-0, Downtown Office District (see Figure 14). Office and retail uses are permitted in this district with a basic Floor Area Ratio (FAR) of 14:1 (Section 124, City Planning Code); that is, a building may have a floor area up to 14 times the area of its site. Under the Interim Controls on downtown high-rise office development imposed by Municipal Ordinance No. 240-80, effective July 1, 1980, bonus space is not permitted for office development, but may be applied to residential uses. Housing is permitted in the C-3-0 district at the maximum allowable rate of one dwelling unit per 125 sq. ft. of lot area (Section 215 (a), City Planning Code).



Legend



-  Use District Boundaries
-  Project Location
- C-2 Community Business District
- C-3-G Downtown General Commercial District
- C-3-O Downtown Office District
- C-3-R Downtown Retail District
- C-3-S Downtown Support District
- RC-4 Residential-Commercial Combined Districts, High Density
- P Public Use District

FIGURE 14:
Planning Code
Use Districts

SOURCE: San Francisco Planning Code and the Zoning Maps Incorporated per Code Section 106

III. Environmental Setting

The project site is in the 600-I Height and Bulk District (see Figure 15). The maximum permitted building height is 600 ft., the maximum permitted facade width above 150 ft. is 170 ft., and the maximum horizontal diagonal dimension above 150 ft. is 200 ft.

According to Section 151 of the City Planning Code, one parking space is required for each four dwelling units provided in the C-3 zoning district. No off-street parking is required by the Code for commercial uses in the C-3 district but, according to Section 204.5 (c) of the Code, up to seven percent of the gross floor area of a building may be devoted to parking as an accessory use when no parking is required. Section 152 of the Code provides a schedule of required off-street loading spaces for retail, office and residential uses. On January 21, 1982, the City Planning Commission adopted Resolution No. 9286 which includes revised guidelines for off-street loading requirements.

B. URBAN DESIGN

VISUAL

The project site is located on Market St. in the City's Financial District. There are street trees along Market St. The site is occupied by two buildings constructed in the 1950's. The facades of both structures are characterized by alternating rows of clear glass and stone, which produce well defined horizontal building lines and provide a visual pattern. The structure at 320 Market St. is about 112 ft. in height; 340 Market St. is about 97 ft. in height. These two structures essentially fill out the entire site block with a triangular building; there are no setbacks, pedestrian plazas, or architectural design features to promote visual interest (see Figures 16 and 17, pp. 34 and 35). The relatively low height of the existing buildings provide street-level scale and visual relief from adjacent high-rise buildings.

- The general area surrounding the project block contains tall, large, modern buildings which dominate views in the site vicinity and contribute to the Financial District's character as a center for office development. The site

III. Environmental Setting

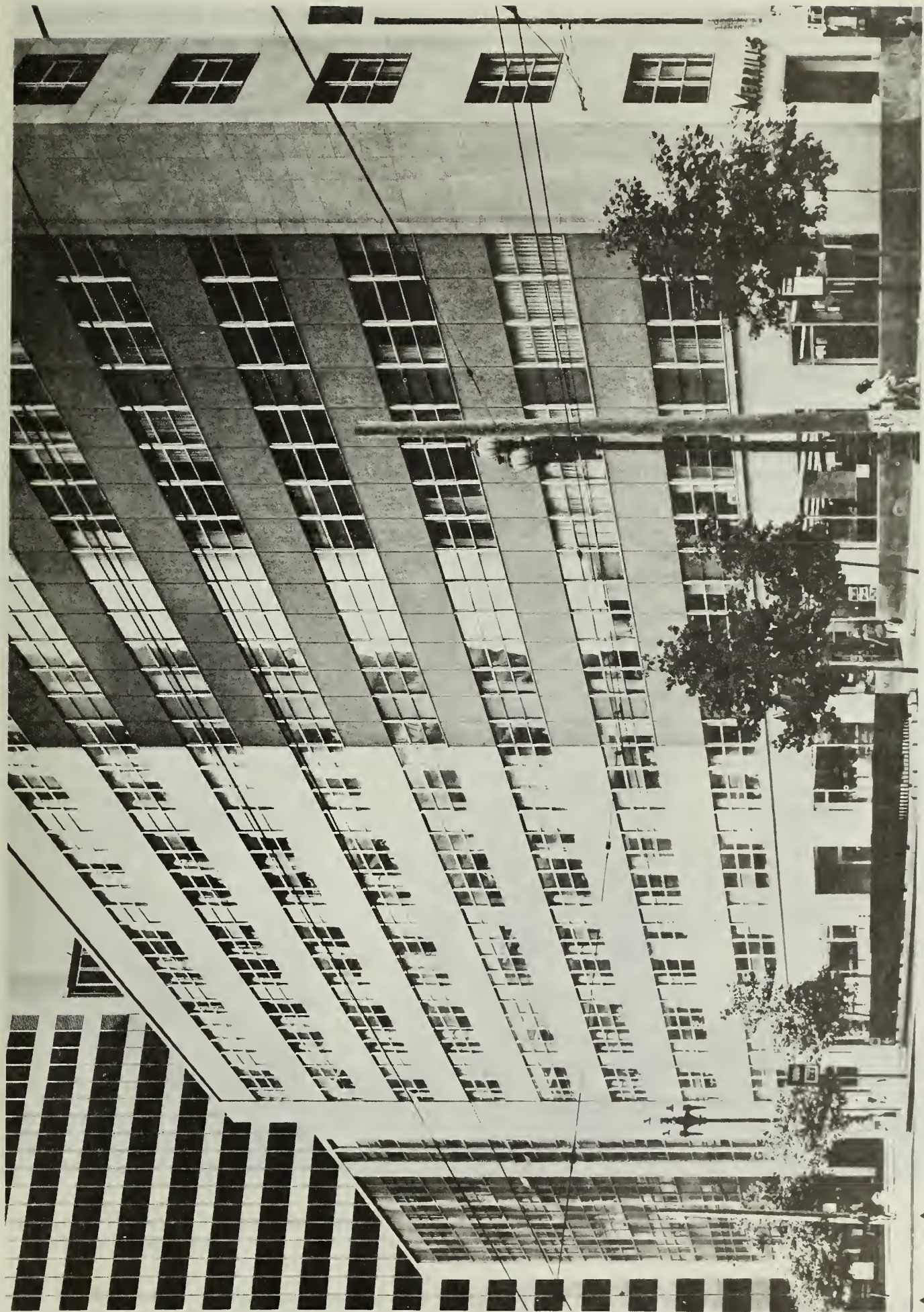
represents a remnant of older middle-rise structures in the Downtown. Older medium-rise buildings in the site vicinity include the PG&E, Matson, and Sheldon buildings on the south side of Market St. With these exceptions, the parcels adjacent to the site have been, or are being, developed with modern high-rise buildings. High-rise structures surrounding the site include the Mutual Benefit Building (32 stories), 100 and 111 Pine St. (33 and 19 stories, respectively), 444 Market St. (38 stories), 333 Market St. (33 stories), and One Metropolitan Plaza (36 stories). The 101 California St. building will contain 48 stories and rise to a height of about 600 ft. Upon completion, the circular design and large size of the 101 California St. building may be expected to provide visual interest from many locations in the project vicinity.

From the existing buildings on the site, views are generally short-range, confined to the nearby buildings and street segments. Long-range pedestrian views are available along Pine and Market Sts. from sidewalks on the site. There are no scenic vistas of the City or the Bay available from the project site.

Views of the site are available from buildings and streets in the vicinity. Generally, views extend beyond the site buildings to neighboring high-rise structures. The project site is not visible from long-range view points, in any direction, due to intervening structures

SHADOW

Light and shadow patterns on streets and sidewalks in the project vicinity are cast primarily by nearby high-rise structures. The buildings producing major shadows in the area include 444 Market St., One Metropolitan Plaza and 333 Market St. (see Figures 21 - 23, pp. 69 - 71). Shadows from the existing structures on the project site are generally confined to nearby street segments, the lower portions of adjacent buildings and the 101 California St. construction site. For purposes of clarity, the shadow diagrams presented on pp. 69 - 71 show existing shadows only for the buildings immediately surrounding the project. Shadow patterns from these buildings are typical of the many high-rise buildings in the area and show that most sections of downtown sidewalks are in shade for about half of each day, throughout the year.



▲ 320 Market St.
▲ 340 Market St.
▲ 444 Market St.

SOURCE: Environmental Science Associates, Inc.



444 Market St. 340 Market St. 320 Market St.

Pine St. 100 Pine St. 101 California St.
(under const.)

SOURCE: Environmental Science
Associates, Inc.

FIGURE 17: View from Market and Beale Sts.

WIND

Wind conditions in San Francisco are a determinant of pedestrian comfort on sidewalks and in other public areas. In downtown areas, flat-walled buildings can funnel wind flows into narrow areas, increase air turbulence, and divert winds downward to street level.

West, southwest, and northwest winds are the most frequent and strongest winds during all seasons in San Francisco./1/ (In meteorology, a west wind blows from the west.) The most frequent wind direction during most months is west; on an annual aggregate basis, west winds blow nearly half of the time. West winds are also the strongest, averaging over seven miles per hour year-round. Southwest winds are typically the second most frequent and second strongest winds. Northwest winds have had the second highest average speed during some years.

Average wind speeds are highest during the summer and lowest during the winter. However, the strongest peak winds occur during the winter, when average speeds for one hour of 27 miles per hour or more have been recorded. The highest average wind speeds are in the mid-afternoon, and the lowest are in the early morning. Peak winds are distributed evenly throughout the day.

NOTE - Urban Design

/1/ This discussion of wind speeds and directions is based on: (1) U.S. Weather Bureau data, collected at 460 California St. near Montgomery St., about three blocks northwest of the site, and (2) Bay Area Air Quality Management District data collected at 939 Ellis St. near Van Ness Ave., about 1.2 miles southwest of the site.

C. EMPLOYMENT, HOUSING AND FISCAL FACTORS

LOCAL AND REGIONAL COMMERCIAL SPACE AND EMPLOYMENT

- San Francisco is the major office center in the Bay Area, with approximately 57.2 million gross sq. ft. of office space at the end of 1981./1/ Approximately 32.3 million gross sq. ft. of office space was constructed between 1960 and 1981 (based on Table C-1, p. 297).

- In the 1960's, the amount of office space constructed averaged about 1.1 million gross sq. ft. per year. During the 1970s office space was added at a rate of about 1.5 million gross sq. ft. per year. In the first two years of this decade (1980 and 1981) the average annual office space added was approximately 2.0 million gross sq. ft. An additional 7.8 million gross sq. ft. of office space will be added when buildings under construction (as of August 1982) are completed; another 5.4 million sq. ft. of office space has been approved but is not yet under construction; 4.2 million gross sq. ft. of office space has been proposed and is under formal review by the Department of City Planning. The amount of office space in the downtown area has increased steadily in the past two decades and will likely continue to increase in the next several years.

The largest employment growth in the Bay area from 1970 to 1978 occurred in the office sector, with over 60 percent of the regional increase in total work force. A total of 1.2 million people in 1978 held office jobs in the Bay Area, with nearly 70 percent employed by firms serving the local population. Over 55 percent of the 280,000 office workers employed in San Francisco worked for employers such as national or regional headquarters which serve a wider geographical area./2/

In early 1981, annual rents in the newer downtown office buildings ranged from about \$24 to \$35 per sq. ft. Office space in the buildings that will go on the market in 1984 is expected to command annual rents of between \$35 and \$50 per sq. ft. In December, 1981, the vacancy rate in downtown office buildings was estimated to be 0.36 percent according to a real estate survey./3/ Low vacancy rates coupled with rapidly growing rents suggest that the supply of new office space in San Francisco has not kept pace with demand.

If office employment in San Francisco continues to account for the same percentage of overall employment growth as it has in the past decade, projections by the Association of Bay Area Governments (ABAG) suggest that a net increase of about 1.25 million sq. ft. of office space will be required each year between 1980 and 1985 to accommodate that growth./4/ Demand for office space, however, could be even greater. The ABAG projection indicates that 1.25 million additional sq. ft. of office space will be occupied each year. This could be because no more than that would be demanded or because no more would be supplied. If occupancy is limited by supply, then more than 1.25 million sq. ft. of new space would be occupied each year if more than that amount were built. Vacancy rates and the rate of rent increase suggest a

backlog of demand. One commercial real estate broker foresees that by 1984, 9.1 million sq. ft. of office space will be available, and all but about two million of this amount is presently leased./5/

With the apparent shortage of office space in San Francisco as one factor, some potential users of San Francisco office space have located elsewhere. While the City houses 60 percent of the region's office space, 56 percent of the new construction, based on building permit value, took place outside the City from 1972-1979./6/ Cheaper space in outlying areas attracts companies that do not need a downtown San Francisco location or can shift their support functions out of the City. For example, approximately nine million sq. ft. of new office space is under construction or planned in the next ten years in major projects in San Mateo County. Office space construction in Contra Costa County is averaging one million sq. ft. a year. Annual rents for new office space in both of these areas average from about \$15 to \$18 per sq. ft. It has been estimated that in San Francisco the annual tax cost to the employer in a 400-person office is \$305.29 per employee while in Concord the cost per employee is \$47.24./7/

EMPLOYMENT AND TENANT MIX AT THE PROJECT SITE

Businesses at the project site employ approximately 600 persons. Tenants in the 340 Market St. building include three offices, a savings bank, a men's clothing store and a subsurface parking garage. The 320 Market St. building is occupied by six offices and a drugstore. The primary office tenants of the 340 and 320 Market St. buildings are the Levi Strauss Company and Standard Oil of California, respectively.

HOUSING

A description of regional and San Francisco housing characteristics is included in the Five Fremont Center, Final EIR (EE.80.268, Certification Date March 12, 1981), pp. 37 - 44. This report is available for public review at the Office of Environmental Review, 45 Hyde St., Room 319, and is hereby incorporated by reference into this EIR pursuant to California Environmental

Quality Act (CEQA) guidelines, California Administrative Code, Title 14, Section 15140. Information on the housing stock includes amount, growth factors, vacancy rates and purchase and rental costs. The information from the Five Fremont Center Final EIR may be updated based upon recently available information. According to 1980 census data for San Francisco, the vacancy rate for owner-occupied housing was 0.6 percent and the vacancy rate for rental units was 2.7 percent./8/ Both regional and San Francisco housing stock are characterized by low growth, low vacancy rates and high purchase and rental costs in relation to typical wages paid. These factors combined have tended to constrict the supply and affordability of housing in San Francisco.

FISCAL FACTORS

The assessed value of the two properties on the site in fiscal year 1981-82 is \$8,294,000 (property is now assessed at 100 percent of fair market value). At the 1981-82 property tax rate of \$1.19 per \$100 assessed valuation, the properties yielded about \$98,700 in property tax revenues, distributed as shown in Table 2.

TABLE 2: DISTRIBUTION OF PROPERTY TAX REVENUES FROM PROJECT SITE IN 1981-82

<u>Agency</u>	<u>Ad Valorem Tax Rate</u>	<u>Percent</u>	<u>Revenues*</u>
City and County of S.F.	\$0.945	79.4	\$78,370
S.F. Unified School District	0.142	11.9	11,740
S.F. Community College District	0.025	2.1	2,070
Bay Area Air Quality Management District	0.002	0.2	200
BART	<u>0.076</u>	<u>6.4</u>	<u>6,320</u>
TOTAL	1.19	100.0	\$98,700

* Based on the 1981-82 composite tax rate of \$1.19 per \$100 of assessed valuation.

SOURCE: San Francisco Controller's Office

General Fund revenues to the City and County of San Francisco from the non-BART sales tax, payroll tax, gross receipts tax, and non-bond property tax, will total about \$343,900 from the site in 1981.

The City incurs costs in serving the existing buildings. Police, fire, and general government expenditures are supported primarily by the General Fund. Most street maintenance, street improvement, and traffic control costs are supported by other revenue sources such as fees, fines, and federal and state aid.

NOTES - Employment, Housing, and Fiscal Factors

- /1/ San Francisco Department of City Planning, August 1982, a table on "Major Office Building Construction and Conversion in San Francisco" (see Table C-1, Appendix C, p. 297).
- /2/ Association of Bay Area Governments (ABAG) and Bay Area Council, December 1979, San Francisco Bay Area Economic Profile.
- /3/ Coldwell Banker, "Office Survey Vacancy Index," December 28, 1981.
- /4/ Association of Bay Area Governments (ABAG) and California Employment Development Department (EDD) data indicates that about 60 percent of the growth in San Francisco employment between 1972 and 1978 was in offices. ABAG projects that employment in San Francisco will increase 41,400 between 1980 and 1985, or an average of 8,300 per year. Sixty percent of that, or 5,000 jobs, are expected to be in offices. Assuming 250 gross sq. ft. of office space per employee, office employment growth would require an additional 1.25 million sq. ft. of office space each year. (Association of Bay Area Governments and Bay Area Council, San Francisco Bay Area Economic Profile, December 1979, pp. 40 - 43; California Employment Development Department, Wage and Salary Employment, By Industry, San Francisco City and County, 1972-1978.)
- /5/ San Francisco Examiner, "Effects of S.F. Office Space Squeeze," January 18, 1981, report on a real estate conference sponsored by Coldwell Banker.
- /6/ Association of Bay Area Governments (ABAG), April 1981, Bay Area Office Growth, Working Papers on the Region's Economy, Number One.
- /7/ San Francisco Examiner, "B of A Quake Hazard Alibi Causes a Political Quake", June 15, 1981.
- /8/ Department of City Planning, Memorandum titled "Vacancy Rates," February 24, 1982, from Dean Macris, Director of Planning.

D. TRANSPORTATION

TRANSIT

The site area is served by electric trolley, diesel bus, and light-rail vehicle (LRV) lines of the San Francisco Municipal Railway (Muni). Regional service is provided to and from the East Bay by the Bay Area Rapid Transit District (BART) at the Embarcadero Station on Market St. and by the Alameda-Contra Costa (A-C) Transit District buses from the Transbay Transit Terminal one block south of the site. Peninsula service is provided by the Southern Pacific Transportation Company from their terminal at Fourth and Townsend Sts. and by the San Mateo County Transit District (SamTrans), which has bus routes and stops along various streets in the area, including Mission St., and transfer connections at the Daly City BART Station. The Golden Gate Bridge, Highway and Transportation District (Golden Gate Transit) provides peak-period bus service to Marin and Sonoma Counties from a.m. stops on Battery and First Sts. near Market St., and p.m. stops on Fremont, Pine and Sansome Sts., from the Transbay Terminal, and from stops along Howard and Folsom Sts. Golden Gate Transit also provides ferry commute service to terminals in Larkspur and Sausalito from the Ferry Building and Harbor Carriers, Inc. provides service to Tiburon. Golden Gate Transit operates a van-pooling program to North Bay areas. There are currently about 70 van pools commuting to San Francisco from Marin and Sonoma Counties; most of these commute to the Financial District. A car pooling program, RIDES for Bay Area Commuters, provides leasing and matching services for establishing van and car pools. Independently owned and operated jitneys provide additional transit service on Mission St. during the peak commute hours.

Muni

Market, Mission, Fremont and First Sts. in the vicinity of the site are Transit Preferential Sts. on which the flow of Muni vehicles is to be expedited using Transportation System Management (TSM) techniques./1,2/ The principal TSM techniques now in effect are exclusive bus (diamond) lanes, the prohibition of left turns, curb-side parking prohibitions between 4-6 p.m. on Mission St., and an exclusive transit turning movement from eastbound

Market St. to southbound First St. Fremont and First Sts. are designated as Pedestrian/Transit/Service Sts. and Market and Mission Sts. are designated as Transit Arterials./1/ The Bureau of Traffic Engineering is presently studying traffic patterns in the area to optimize signalization for transit flow. Peak-hour headways between Muni vehicles on First and Fremont St. (between Market and Mission Sts.) are now about 75 seconds, and are projected to be 35 seconds by 1986./3/

Muni has plans to increase the capacity of its downtown service in several ways. Fifteen additional Light Rail Vehicles (LRVs) are on order for use in the Muni Metro System. Construction of a loop to replace the existing stub-end terminal at The Embarcadero is planned, with a possible surface extension on The Embarcadero; implementation is partly contingent upon federal funding, which has not yet been secured. Also planned is the introduction of articulated buses with a capacity 50 percent larger than conventional buses. None have been ordered to date./3,4/ Further integration of BART into the downtown transit system is planned by allowing use of Muni Fast Passes for travel on BART trains within San Francisco. Increases in above-ground route capacity are planned by restrictions on automobile use on Market St. and other streets, which would reduce running times on lines using these streets. Capacity is planned to increase further from additional use of express buses.

Present scheduled outbound capacity on routes serving the Central Business District between 4:30 and 5:30 p.m. is about 42,000 passengers. The projected capacity in 1985 is about 53,000./3,4/ The increase in capacity is planned to approximately match the increase in demand, so that present operating conditions, such as excessive crowding on some vehicles, are not expected to improve./4/

The project site is centrally located for access to all transit lines. All Muni Metro LRV and BART lines serve the site from the Embarcadero subway station at Beale and Market St. Forty-one Muni bus and trolley lines stop within 2,000 feet (walking distance) of the site. Also within walking distance are the Transbay Terminal and the Ferry Terminal. Bus service to the Southern Pacific Depot is available within two blocks via Routes 27, 42, and 80X. As shown in Figure 18, about 15 routes run within one block of the site. Both legs of the Route 42 Downtown Loop, stop within two blocks.

Muni has established maximum recommended passenger loadings (a load factor of 1.0) which are used as a basis for scheduling peak-hour trips on each route, ranging from 144 percent to 220 percent of seated capacity, depending on the vehicle type./3/ Loading in excess of the recommended maximum increases passenger loading time, reduces schedule adherence, and provides a low level of passenger comfort. Figures D1-D3, Appendix D, p. 305 show peak-hour conditions on several Muni lines and Table D-4, p. 310 shows peak load factors on Muni lines serving the Downtown..

Environmental Science Associates surveyed Muni vehicles serving the project site and found that load factors (the ratio of the number of riders to the recommended maximum) varied between 0.1, on the 7 and 8 Routes and 1.0 on the 21 Route. Since the site is near the origin of most routes, the load factors are lower than at other points on the routes. The Muni Metro N Route load factor was observed to increase from 0.5 to 0.9 between the Embarcadero and Civic Center Stations. Table D-3, p. 309 in Appendix D, shows the load factors observed on the Muni lines.

The Muni Five-Year Plan outlines a program for integrating Muni and regional service. Programs for improving route structures, collection procedures, and regional transfer coordination are planned which would increase the percentage of non-San Francisco residents (presently 10 percent) making use of Muni. These programs would primarily affect trips to non-downtown locations and the other eight Bay Area counties.

Other Carriers

Regional transit systems had outbound, afternoon peak-hour, downtown patronage of 42,000 in 1980, with capacity for 59,000./3,5/ SamTrans and BART exceed their seated capacities during peak hours, but operate at less than 100 percent of total capacity. The other regional carriers operate during peak hours at less than 100 percent of their seated capacity, although, some routes experience loadings in excess of seated capacity from five to 30 minutes during the peak hour. On most systems, peak demand is more intense during the p.m. period than the a.m. period.

PEDESTRIANS

- Existing p.m. peak-hour pedestrian traffic volumes on sidewalks around the project block and in crosswalks across Market, Pine, Front, and Davis Sts. are in the range of 10 to 40 persons per minute. The principal flows are along the east side of Front St. on the project block, and along Market St., where the sidewalks operate at about 20 percent and 10 percent of capacity, respectively. Of the crosswalks, the most nearly congested are those at the intersection of Pine and Front Sts., which operate at about 40 to 50 percent of capacity during the p.m. peak hour. Also, about 40 to 50 percent of the "reservoir" space in the corners of that intersection is used by pedestrians waiting to cross./6/

VEHICLES

Pine, Front, and Market Sts. border the triangular project block on the north, west and south, respectively. Each of these streets is a transit street. During peak hours there are about 100 buses per hour on both Market and Front Sts. and 50 buses per hour on Pine St.

- Pine and Front Sts. operate with two traffic lanes and are one-way westbound and northbound, respectively; Market St. is two-way (four lanes), but left turns from Market St. are prohibited at its intersections with Front and Pine Sts. Through movements at the intersections of these streets now operate with volumes at 50 percent or less of capacity during the p.m. peak hour, and are, therefore, not delayed./7/ Turning movements at the intersections conflict with pedestrians in crosswalks, however, and vehicles encounter some delay. The right turn from Market St. (westbound) onto Pine St. and the left turn from Front St. (northbound) onto Pine St. encounter delays. Drivers making these turns have less than half of the signal cycle to complete turns due to conflicts with pedestrians in the crosswalk. Two-thirds of the 600 vehicles on Front St. during the p.m. peak hour turn left into Pine St., including all but a few of the 100 buses then on the street. The left curb lane in the approach of Front St. to Pine St. is the left-turn lane, and there are two through-only lanes. The resulting backup of vehicles typically extends towards Market St. for half the block on the west side of the street, opposite the project site.

PARKING

- The 340 Market Street building on the site has a subsurface parking garage containing about 40 long-term parking spaces. Within a walking distance of about 2000 ft. from the site are approximately 13,000 off-street public parking spaces. Figure 22A showing the location of existing off-street public parking spaces contained in the Central Plaza EIR (81.113E, SCH #82032310, Certified July 15, 1982, p. 54a) is hereby incorporated by reference into this EIR pursuant to California Environmental Quality Act (CEQA) Guidelines, California Administrative Code, Title 14, Section 15140. This report is available for public review at the Office of Environmental Review, 450 McAllister St., Fifth Floor. When the accumulation of parked vehicles in these garages reaches its peak at late morning or early afternoon, only about 500 spaces (four percent) are vacant in the entire area. Vacant spaces are not immediately found and filled by drivers seeking to park, so there is always this de facto vacancy rate of a few percent, regardless of the extent to which parking demand exceeds the supply. It may be stated that essentially no opportunity exists to increase the number of parked vehicles in public parking garages in the area.

Demand for short-term, curbside parking in the vicinity also exceeds the available supply; spaces vacant during business hours are virtually nonexistent.

Around the project block, parking or stopping on Market St. is prohibited, there is a yellow curbside loading zone in effect on Front St. from 7:00 a.m. to 1:00 p.m., and a yellow curbside loading zone along most of the block on Pine St.

NOTES - Transportation

/1/ Transit Preferential Sts. are streets where interference with transit vehicles by other traffic should be minimized. Pedestrian/Transit/Service Sts. are streets that should be oriented primarily or exclusively to the satisfaction of pedestrian, transit, or service (loading) requirements. Transit Arterials are routes of major arterial transit lines. (Transportation Element of the Comprehensive Plan, adopted by the City Planning Commission, April 27, 1972)

/2/ Transportation System Management techniques are specified in the San Francisco Municipal Railway, April 1980, Five Year Plan: 1980-85, as follows:

- 1) creation and enforcement of exclusive transit lanes;
- 2) synchronization of traffic signals with the speed of transit vehicles rather than the speed of automobiles, and the use of signal devices which can be preempted by transit vehicles;
- 3) extension into the street of sidewalk curbs at bus stops so that buses may pick up passengers without having to leave and re-enter the lane of travel; and
- 4) enforcement of traffic and parking regulations which facilitate the movement of transit vehicles.

/3/ San Francisco Municipal Railway, April 1980, Five-Year Plan: 1980-85.

/4/ Susan Chelone, Municipal Railway Transit Planner, personal communication, July 22, 1981. Information to be found in the unpublished Five-Year Plan: 1981-86.

/5/ Office of Environmental Review, October 1980, Guidelines for Environmental Evaluation - Transportation Impacts.

/6/ This discussion is based on observations made between 4:30 and 5:30 p.m. on Tuesday, September 15, Wednesday, October 21, and Friday, October 23, 1981. The analysis follows methods described in the book Urban Space for Pedestrians, by Boris Pushkarev and Jeffrey Zupan.

/7/ This discussion is based on observations made on Tuesday, September 15, and Wednesday, October 14, 1981. The estimates of capacity consider the existing signal timing on each approach.

E. AIR QUALITY

The Bay Area Air Basin in which the project site is located has been designated by the California Air Resources Board (ARB) as a nonattainment area for ozone and carbon monoxide (CO)./1/ Attainment of the CO and ozone standards is expected in 1984 and 1987, respectively.

The Bay Area Air Quality Management District (BAAQMD) operates an air quality monitoring station approximately 1.7 miles south of the site at 900 23rd St., east of Potrero Hill. A three-year summary of San Francisco data collected and the corresponding air quality standards, are shown in Appendix E, p. 325.

The highest annual pollutant concentrations in San Francisco have shown an overall improvement during the 1971-1980 period. No similar trend in the annual number of excesses has been noted. However, excesses are infrequent; only the standard for total suspended particulate (TSP) was exceeded in 1980.

CO and TSP concentrations are localized in time and space, varying with activity levels and meteorological conditions. Ozone concentrations, which arise from complex photo-chemical reactions involving hydrocarbons and nitrogen oxides, are highest downwind of sources.

The Bay Area Air Quality Plan, adopted in 1979 by the Association of Bay Area Governments, established control strategies to attain and maintain the various standards by 1982. These strategies include stationary source and mobile source emission controls and transportation improvements to be implemented by ARB, BAAQMD and the Metropolitan Transportation Commission./2/

Worst-case existing CO concentrations at sidewalks in the project vicinity, shown in Table 9, p. 101 were calculated using methods recommended by the BAAQMD./3/ No excess of either the 8-hour standard or 1-hour standard was found on Market or Pine Sts. near the project site.

NOTES - Air Quality

/1/ A non-attainment area is one in which the federal air quality standard for the designated pollutant has been violated within the past two to three years.

/2/ Association of Bay Area Governments, BAAQMD and the Metropolitan Transportation Commission, 1979, Bay Area Air Quality Plan.

/3/ Bay Area Air Pollution Control District, 1975, Guidelines for Air Quality Impact Analysis of Projects.

F. NOISE

As is typical of Downtown San Francisco, the noise environment of the project site is dominated by traffic and construction noise. Trucks, buses, automobiles, and emergency vehicles, as well as construction equipment, are the major contributors. Noise levels were measured at three locations near the project site during the afternoon on Wednesday, October 14, 1981. These three locations, at the midpoints of the site blocks on Market, Front and Pine Sts., are hereafter referred to as locations 1, 2, and 3, respectively.

At location 1, on Market St., traffic was the predominate source of noise. Infrequent diesel buses were the greatest intrusive noise source, generating levels up to 80 dBA./1/ At location 2, on Front St. and location 3, on Pine St., noise from construction in the vicinity was noticeable, in addition to traffic noise. At location 2, diesel buses and construction noise were the greatest intrusive noise sources, peaking at noise levels of about 82 dBA.

Piledriving, possibly from Five Fremont Center under construction over a block away from the project site, was also apparent at location 2 intermittently generating noise levels up to 78 dBA. Construction at the 101 California St. site and diesel buses were the dominant noise sources at location 3. Noise levels up to 82 dBA were intermittently measured at this location.

Construction at the 101 California St. site can be expected to generate higher intrusive levels during the day depending on the level of worker activity and equipment use.

The data from the three noise measurement locations are summarized in Table 3. Peak-hour traffic noise levels can be expected to be approximately 3 to 4 dBA higher than those presented in the table./2/ This estimate is based on traffic counts which were undertaken on streets surrounding the site on the same afternoon as the noise measurements. The Environmental Protection Element of the San Francisco Comprehensive Plan indicates a day-night average noise level (Ldn) of 70 dBA on Market, Pine, and Front Sts, adjacent to the site in 1974./3/ These noise levels are consistent with those observed during the noise measurement survey.

TABLE 3: NOISE LEVELS NEAR THE PROJECT SITE (IN dBA) MEASURED ON WEDNESDAY, OCTOBER 14, 1981.

<u>LOCATION</u>	<u>TIME</u>	<u>Leq*</u>	<u>L10</u>	<u>L50</u>	<u>L90</u>
1 (Market St.)	3:35-3:45	70	73	70	69
2 (Front St.)	3:45-3:55	72	76	71	68
3 (Pine St.)	3:55-4:05	73	76	73	70

*The Leq is the equivalent steady-state sound level which, in a given period of time, would contain the same acoustic energy as the time-varying sound-level during the same period. The L10, L50, and L90 represent the A-weighted sound levels exceeded in 10 percent, 50 percent, and 90 percent of the measurements, respectively.

SOURCE: Environmental Science Associates, Inc.

NOTES - Noise

/1/ Decibel (dB) is a logarithmic unit of sound energy intensity. Sound waves, traveling outward from a source, exert a force known as sound pressure level (commonly called "sound level"), measured in decibels. dBA is decibel corrected for the variation in frequency response of the typical human ear at commonly encountered noise levels.

/2/ A 3dBA increase in noise represents a doubling of the sound-pressure level. The human ear does not react, however, in direct proportion to the intensity of a sound-pressure level. Most people perceive noise as twice as loud when the sound-pressure level is raised by 10 dBA.

/3/ Ldn is an averaged sound level measurement, based on human reaction to cumulative noise exposure over a 24-hour period, which takes into account the greater annoyance of nighttime noises. Noise between 10 p.m. and 7 a.m. is weighted 10 dBA higher than daytime noise.

G. ENERGY

- Pacific Gas and Electric Company (PG&E) furnishes electricity and natural gas to the City of San Francisco. PG&E obtains a portion of its electrical energy from renewable resources including geothermal and hydroelectric power, but will meet new demands for energy primarily by increasing the use of nonrenewable coal, oil, natural gas and nuclear fuels. Among the major new power plants expected by PG&E are the Diablo Canyon nuclear plant and the Helms Pump Storage hydroelectric plant. Both projects are expected by PG&E to have their first units come on line by January 1983 (Diablo Canyon is awaiting completion of a seismic safety study and then must receive an operating permit from the Nuclear Regulatory Commission). Unit Two of Diablo Canyon and Units Two and Three of the Helms Plant are anticipated to begin operating in mid-1983. Municipally owned utilities anticipate some supplies from the Harry Allen Nevada coal-fired plant, beginning in the late 1980's. In response to a directive of the State Public Utilities Commission, PG&E will be required to increase generating capacity from co-generation projects, which generate electricity in combination with industrial processes that already use fossil fuels as a source of heat. PG&E also anticipates increased purchases of electricity from other utilities. This power is expected to come from surpluses generated by hydroelectric and nuclear plants in Washington State. These surpluses are uncertain due to cancellation of two of the five Washington Public Power Supply System nuclear plants and long-term delays in a third plant, as well as increased demand for electricity in the Pacific Northwest./1a/

Energy consumption on the project site is associated with the existing 14,000 sq. ft. of retail space and 130,800 sq. ft. of office space. The existing buildings on the site were built before present State energy standards. The two existing structures on the site consumed 7.4 million

kilowatt hours of electricity and 32,000 therms of natural gas in 1981 for a total of 79 billion Btu at-source. /1,2/ This represents consumption of approximately 487,000 Btu at-source per sq. ft. per year. This relatively large annual energy consumption is probably due to the presence of extensive computer facilities for three of the office tenants presently on the site.

Notes - Energy

/1/ Monica Quan, Accountant, Honorway Investment Corporation, telephone communication, February 25, 1982.

- /1a/ Jim Davidson, Senior Civil Engineer, Generation Planning, PG&E, telephone communication, May 21 and August 3, 1982.

/2/ Btu, British thermal unit, a standard unit for measuring heat. Technically, it is the quantity of heat required to raise the temperature of one pound of water 1 degree Fahrenheit (251.98 calories) at sea level. The term 'at-source' means that adjustments have been made in the calculation of the Btu energy equivalent to account for losses in energy which occur during generation and transmission of the various forms of energy as specified in: ERCDC, 1977, Energy Conservation Design Manual for New Nonresidential Buildings, Energy Resources Conservation and Development Commission, Sacramento, CA; and Apostolos, J.A., W.R. Shoemaker, and E.C. Shirley, 1978, Energy and Transportation, Sacramento, CA. (Project 20-7, Task 8).

H. GEOLOGY, SEISMOLOGY, AND HYDROLOGY

GEOLOGY

The site is located on flat land about one mile from San Francisco Bay. The site is at about elevation 0, San Francisco Datum (SFD), which is 8.6 ft. above mean sea level./1/ Higher land is located to the west at Nob Hill, to the northwest at Telegraph Hill, and to the southeast at Rincon Hill.

Before 1850, the site was under the waters of San Francisco Bay, within Yerba Buena Cove; the land has since been reclaimed by the placement of fill, consisting of dune sand, silt, clay, rock waste from excavations, organic material, and garbage. Several feet of settlement have occurred in the vicinity since the fill was placed, although the rate of settlement has diminished considerably in recent years (Dames & Moore, 1979, see Note /2/).

A detailed soils and foundation investigation has not yet been prepared for the site, although one would be prepared prior to construction. Based on data developed for two high-rise buildings adjacent to the site, 444 Market St. and 101 California St., subsurface conditions at the site can be approximated./2/ Fill underlies the site to an average depth of about 25 ft. Beneath the fill are recent Bay deposits (Bay Mud) from about 25 to 55 ft. in depth, a layer of sand interspersed with layers of silt and clay from about 55 to 70 ft. in depth, a layer of older Bay sediments (Older Bay Clay) from about 70 to 150 ft. in depth, a layer of sand from about 150 to 190 ft. in depth, and another layer of older Bay sediments from about 190 ft. to 235 ft. in depth. This last layer extends down to bedrock, composed of rocks of the Franciscan Formation. The fill, Bay Mud, and upper sand layers are compressible, unstable and generally unsuitable for support of multistoried buildings. All high-rise structures in the project vicinity are supported on piles driven down to or just above the older Bay sediments. The underlying old Bay clays are stiff and capable of bearing heavy loads.

SEISMOLOGY

No active faults are known to exist within the City of San Francisco./3/ Several active faults in the San Francisco Bay Area, including the San Andreas Fault, the Hayward Fault, and the Calaveras Fault, could affect the site. The San Andreas Fault is located about 10 miles to the southwest; the Hayward Fault is about 15 miles to the east; and the Calaveras Fault is about 30 miles to the east.

Both the San Andreas Fault and the Hayward Fault have produced major and minor earthquakes in the past, and can be expected to do so in the future. Within the next 60 to 170 years (estimates of the recurrence interval vary), at least one earthquake of the magnitude of the 1906 San Francisco Earthquake (about 8.3 on the Richter Scale) can be expected to occur on the San Andreas Fault./4/ Smaller earthquakes, such as the Daly City earthquake of 1957 (about 5.3 on the Richter Scale) can be expected with greater frequency than a major earthquake.

Major seismic hazards on the project site include groundshaking, liquefaction, and subsidence./5/ Groundshaking, usually the most destructive component of earthquakes, is expected to be "violent" for a 1906-magnitude earthquake. Such groundshaking could cause "fairly general collapse of brick and frame structures when not unusually strong", and "serious cracking of better buildings"./6/ Liquefaction may also occur in the sandy fill directly below the site (Dames and Moore, 1975, see Note /2/).

HYDROLOGY

No water bodies, springs, or water courses are located on the site. Under natural drainage conditions the site would receive the runoff from surrounding areas to the north and west. The site is covered with impermeable surface; thus, all rainfall flows as runoff from the site and is directed to City storm drains. Surface runoff is generally greatest during the wet-weather November-April period.

The groundwater level under natural conditions probably occurs at about elevation -10 feet, SFD. The groundwater level may be lower, due to previous dewatering at the adjacent 101 California St. site. Groundwater levels also fluctuate with the seasons, tides, and amount of rainfall received during the year.

The site is located within the estimated run-up area of a 500-year tsunami./7/ Assuming a 20-foot-high run-up at the Golden Gate, the 500 year tsunami would run up about 8 to 10 ft. above mean sea level./8/ Since the ground elevation of the site is at about 8.6 ft. above mean sea level, basements and the ground floor of structures on the site could be subject to water damage. The 100-year tsunami, which would occur on the average of once every 100 years would run up about 5 ft. above mean sea level and would not, therefore inundate the site.

NOTES - Geology, Seismology, and Hydrology

/1/ San Francisco Datum is a reference point for surveying and vertical distance measurements. The elevation of the San Francisco Datum is 8.6 feet above mean sea level.

/2/ Reports referred to are:

- 1) Dames & Moore, June 8, 1979, Geotechnical Investigation, Proposed Office Building, San Francisco, California, prepared for Gerald D. Hines Interests (i.e. 101 California Street Building);
- 2) Dames & Moore, January 31, 1975, Foundation Investigation, Proposed 444 Market Street Building, San Francisco, California, prepared for the Continental Development Corporation.

/3/ An active fault is a fault along which movement has occurred within the last 10,000 years, or which has exhibited historic earthquake activity.

/4/ The Richter scale is a logarithmic scale developed by Charles Richter to measure earthquake magnitude by energy released, as opposed to earthquake intensity as determined by effects on people, structures and earth materials. The San Francisco earthquake of 1906 is estimated to have had a Richter magnitude of 8.3.

/5/ Liquefaction is earthquake-induced transformation of a stable granular material, such as sand, into a fluid-like state, similar to quicksand. Subsidence is an uneven local settlement of the ground's surface. Although it can occur under normal (static) conditions, it is frequently activated by strong ground motion, such as that from a major earthquake.

/6/ URS/John A. Blume and Associates, 1974, San Francisco Seismic Safety Investigation, Geologic Evaluation.

/7/ Tsunamis, also known as seismic sea waves or "tidal waves", are long-period waves generated by some earthquakes, undersea landslides, or volcanos; upon reaching the shallow water of coastal areas, the waves greatly increase in height and may cause localized flooding. The San Andreas Fault does not cause earthquakes of the type that cause tsunamis. The 500-year tsunami is the largest tsunami that would (statistically) occur within the next 500 years. The run-up of a tsunami is the height above still water level reached by a wave as it washes up on a shore or structure.

/8/ Garcia, A.W., and J.R. Houston, 1975, Type 16 Flood Insurance Study: Tsunami, Predictions for Monterey and San Francisco Bays and Puget Sound, Technical Report H-75-17, Hydraulics Laboratory, U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

IV. ENVIRONMENTAL IMPACTS

An Initial Study of the proposed project was published November 13, 1981, and a determination was made that an Environmental Impact Report was required. Issues that were considered to require no further discussion as a result of the Initial Study include: land use compatibility, operational noise, construction-related air quality, public services and utilities, biology, health hazards, and cultural and historic factors. Therefore, this EIR does not discuss the above issues. The Initial Study is incorporated herein as Appendix A, p. 244, and may be referred to for a discussion of these issues.

A. LAND USE AND ZONING

The project would require demolition of the two existing buildings on the site at 320 and 340 Market St., both of which are owned by the project sponsor. Neither building received a rating in the survey conducted by the Foundation for San Francisco's Architectural Heritage nor is listed in the City's list of Architecturally and/or Historically Significant Buildings in the Downtown.

The project would respond to the definition and purpose of the C-3-0 (Downtown Office) District stated in Section 210.3 of the City Planning Code that the District play a leading national role in finance, corporate headquarters and service industries, and serve as an employment center for the region. The project would be consistent with Objective 6 of the Commerce and Industry Element of the Comprehensive Plan by maintaining and improving San Francisco's position as "a prime location of financial, administrative, corporate and professional activity," and would conform to Policy 2 of that objective in contributing to the maintenance of a compact downtown core.

The proposed building height of about 375 ft. would be about 225 ft. less than maximum of 600 ft. permitted in the 600-I Height and Bulk District. The building length and diagonal measurement would be 220 ft., exceeding the

maximum permitted length and diagonal dimensions of 170 ft. and 200 ft., respectively. The project would require an exception to the bulk limitations of Section 271 of the City Planning Code, in accordance with the procedures for Conditional Use authorization described in Section 303 of the Code. The bulk limitations may be exceeded "to a certain degree," according to Section 271 of the Code, if the project would result in the "achievement of a distinctly better design, in both a public and a private sense, than would be possible with strict adherence to the bulk limits, avoiding an unnecessary prescription of building form while carrying out the intent of the bulk limits and the principles and policies of the Master Plan."

Gross floor area of the lobby, office, and retail space would be approximately 257,000 sq. ft., representing a basic Floor Area Ratio (FAR) of 14:1. Project plans include about 85,900 sq. ft. of residential use. The square footage of the proposed residential units would cause the building to exceed the 14:1 basic FAR permitted in the C-3-0 District. The FAR represented by the residential portion of the project would be approximately 4.7:1, for a total project FAR of about 18.7:1.

The use of bonuses, described in Section 126 of the City Planning Code, would permit space in addition to the basic FAR. Permitted bonus space could be used for, and is limited to, residential uses, under the Interim Controls on downtown high-rise office development (Municipal Ordinance No. 240-80, effective July 1, 1980). The project sponsor intends to request approximately 85,900 sq. ft. of bonus floor area, which would provide an FAR of about 18.7:1.

- The proposed subsurface parking levels would extend beneath the Front St. and Pine St. sidewalks. This would require a variance from Section 155(b) of the City Planning Code, which requires every off-street parking space to be provided entirely on private property. A revocable encroachment permit, to allow subsurface parking beneath public sidewalks, would be applied for with the building permit. The parking facility would use only subsurface public space and would not interfere with utility lines, but may preclude the possibility of planting trees on the Pine St. and Front St. sidewalks; according to the architect, about five ft. of root space would be available beneath the affected sidewalks./1/ The Urban Design Element of the

IV. Environmental Impacts

Comprehensive Plan contains Policies for Conservation which maintain a presumption against giving up street areas for private use. The project would conflict with Policy 9 criteria for review of proposals to release street areas, because providing parking on the project site would be contrary to the Transportation Element policy which discourages new long-term parking in the Downtown. The encroachment permit would respond to Policy 10 which permits release of street space in the least permanent manner, such as issuance of a revocable permit in preference to a street vacation. According to Section 310.1 of the San Francisco Building Code, the encroachment permit application would require approval from the Superintendent and City Engineer. This would occur upon recommendation from the Department of City Planning.

The two levels of subsurface parking would contain about 22,300 net sq. ft. (exclusive of ramps, and elevator core area) and would accommodate about 47 passenger vehicles. Twenty-one spaces, or about 10,000 net sq. ft., could be permitted as an accessory use to the residential units as 150 percent of the residential parking requirement in this C-3 District. The remaining 12,300 net sq. ft. (about 26 spaces) could be permitted as accessory parking for the office and retail portions of the building. Up to seven percent of the gross commercial floor area, about net 18,000 sq. ft., or about 38 spaces, could be permissible as accessory parking for the commercial portion of the building under Section 204.5 of the Code; this would be 28 spaces more than are proposed for this use. The project sponsor proposes to designate 37 of the 47 proposed parking spaces to serve the residential units; this allocation of spaces would require a Conditional Use authorization because Section 204.5(c) of the Code places limits on the amount of parking considered to be an accessory use. According to the project architect, the 14 parking spaces which would be required for the residential units under Section 151 of the Code in this C-3 District could be accommodated entirely within the property line if the encroachment permit were revoked after project completion./1/

The project would include a loading dock, accessible from Front St., with two stalls, each 10 ft. wide; one stall would be 35 ft. deep and the other would be 25 ft. deep. The number of loading spaces proposed would conform to the requirements of Section 152 of the City Planning Code and City Planning Commission Resolution No. 9286./2/ The loading dock dimensions would be

IV. Environmental Impacts

consistent with the requirements of Section 154 of the Code; however, the proposed dimensions would be less than the minimum requirements given in Resolution No. 9286, of 35 ft. deep and 12 ft. wide for each loading space. The proposed loading and parking plan also does not comply with Resolution No. 9286 in the following ways: The width of the curb cut for the loading dock would be 26 ft., compared to a maximum allowable of 24 ft.; the combined length of curb cuts on Front St. for the loading dock and off-street parking facility would be 37 ft., compared to a maximum allowable of 36 ft.; and, the distance between curb cuts would be 6.5 ft., compared to a minimum allowable of 20 ft. (see Figure 3, p. 12). The project would conform to the Resolution No. 9286 requirement that the total length of curb cuts for loading and off-street parking access not exceed 33 percent of any single street frontage.

Open space for project residents would be provided by private balconies for individual condominiums. The balconies are presently being designed by the architect; it is expected that each condominium would have at least 60 sq. ft. of balcony space, for a minimum of about 3,400 sq. ft. of total private open space. In addition, an athletic health club containing about 3,800 sq. ft. would serve as a common facility for residents and employees of the building. Including the rooftop observation deck, containing about 350 sq. ft., total common and private open space included in the project would be about 7,550 sq. ft. The project would be responsive to the Commerce and Industry Element of the Comprehensive Plan by providing "amenities for those who live, work and use Downtown" as well as with the open space requirement for residential use in the C-3 District (Section 135 (d) of the City Planning Code). According to Section 134 of the Code, a 25 percent rear yard (i.e. 25 percent of lot depth) would be required at the first residential level and for each succeeding residential level in this C District. The project as proposed would require a variance from this requirement.

By providing about 57 residential dwelling units, the proposed project would comply with Objective 2 of Policy 2 of the Residential Element of the Comprehensive Plan that recommends "multiple-residential development in conjunction with commercial uses in the Downtown commercial area." The 57 units would be less than the maximum number of 146 units allowed for the site by Section 215 (a) of the City Planning Code. The six and one-half

floors of condominium apartments above the office floors would be the only residential use in the vicinity of the site. Housing nearest the site is located four blocks to the north in the Golden Gateway, a multiple residential complex, four blocks to the west in two residential hotels on Kearny St., and four blocks to the south on Guy Place and Lansing St. There is no housing to the east. Housing on top of office buildings is proposed on the Dollar Block in the proposed 333 California St. project one block northwest of the site, and in the New Montgomery Place project three blocks to the west. Housing has been approved on top of office use in the Montgomery - Washington Building, about six blocks northwest of the site. The provision of housing may stimulate the development of other housing in the vicinity. There are presently few domestic retail services in the site vicinity; the nearest grocery store is about four blocks from the site. Eventually, residential services may be established within the immediate area as the amount of residential land use in the downtown district increases.

Because the site is on Market St., the project plans would be subject to discretionary review by the City Planning Commission under the provisions of its Resolution No. 6111, adopted on June 29, 1967. This resolution established "a policy of reviewing under its discretionary powers all applications for new and enlarged buildings along Market Street from the Central Freeway to San Francisco Bay." The review would be "in terms of relationship to the street, heights, cornice lines, setbacks and the placement and shaping of building towers, in order to promote the attractiveness, continuity and integrity of the street and its functions." The building would also be reviewed by the Planning Commission under its policy of discretionary review of all downtown high-rise buildings during the period of Interim Controls on the use of floor area bonuses in order to implement various policies as noted in their Resolution No. 8474 adopted January 17, 1980.

Guiding Downtown Development. In May, 1981, the Department of City Planning published Guiding Downtown Development (GDD), a report containing a series of regulatory proposals for managing development in downtown San Francisco. (See Section VII, for an alternative conforming with the recommendations contained in GDD.) GDD recommends that the basic FAR for the project site be changed from 14:1 to 12:1, with an additional FAR of 5:1 allowable for residential

IV. Environmental Impacts

uses. The allowable height would be reduced from 600 ft. to 500 ft. The gross commercial floor area of the project would exceed the GDD recommended FAR of 12:1 by 2:1. The 4.7:1 FAR proposed for housing would be approximately the same as the GDD allowable additional FAR for on-site housing of 5:1. At a total FAR of 18.7:1, the project would exceed the GDD maximum FAR of 17:1 by 1.7:1. GDD recommends that the average floor area of floors above the midpoint of the building height be about two-fifteenths less than the average floor area of the floors below the midpoint. The proposed building design, which includes one setback above the second floor of the project, would not conform to this provision. At about 375 ft., the project would be 125 ft. less than the 500 ft. GDD height limit.

The project would include ground-floor retail space, encouraged by GDD. Public works of art, valued at one percent of construction costs, are recommended in GDD. Art work would be provided at the ground level of the project, although its cost has not yet been determined. GDD policies suggest that one sq. ft. of public open space be provided for every 25 sq. ft. of gross building floor area. If this guideline were applied to the entire structure, including residential space, the recommended amount of open space would be about 13,700 sq. ft. for the project, or about 75 percent of the site area. If only applied to the commercial portion of the building, the recommended amount of open space would be approximately 10,300 sq. ft. The project as proposed would have a public gallery containing about 2,400 sq. ft. on the ground floor as a pedestrian amenity and private balconies containing a minimum of 3,400 sq. ft. in total for individual condominiums. About 3,800 sq. ft. of common open space for use by project residents and employees would be provided as an athletic health club.

GDD recommends that 640 sq. ft. of housing be constructed for each 1000 sq. ft. of office space. This ratio would yield about 150,000 sq. ft. of housing for the project, approximately 64,100 sq. ft. more than the amount proposed on-site as part of the project. If the maximum amount of office space allowed under GDD were provided, for an FAR of 12:1, GDD would not permit the construction of more than 91,800 sq. ft. of additional floor area for housing (a maximum additional FAR of 5:1) on this site. This amount would be approximately 5,900 sq. ft. more than the residential use proposed as part of

IV. Environmental Impacts

the project. That portion of the GDD housing requirement not provided on-site would have to be provided off-site. Additional housing floor area could be developed on-site under GDD if the commercial floor area of the building were reduced. GDD also recommends 0.9 units of housing per 1000 gross sq. ft. of office space. The project would contain about 57 residential units, about 150 units fewer than the 210 units recommended according to this GDD formula.

NOTES - Land Use

/1/ Jared Carlin, Project Architect, Skidmore, Owings and Merrill, personal communications, February 17, and March 26, 1982.

/2/ City Planning Commission Resolution No. 9286 and Exhibit A, "Off-Street Freight Loading and Service Vehicle Space Requirement and Guidelines," approved January 21, 1982.

B. URBAN DESIGN

VISUAL

The project would result in the demolition of the two existing medium-rise structures on the site and construction of a 26-story high-rise tower about 380 ft. tall. The project would contribute to the trend of Market St. and the Financial District from low- and medium-rise structures to high-rise development. The project would relate to nearby modern, tall buildings in scale and design, but would contrast with older development in the vicinity.

The project would not obstruct any scenic view or vista now available to the public as the building would be surrounded by structures as high or higher than the project. The project would block short-range views from nearby existing buildings and from the 101 California St. Building which is now under construction. The project would block some views of the Bay from the adjacent 444 Market St. building; interrupted views would generally be similar to those created in the project.

The project would be visible primarily from nearby buildings and street segments (see Figures 19 and 20, pp. 62 - 63). The proposed building would not be a prominent feature on the skyline nor be visible from long-range view points due to intervening structures.



▲
Crown
Zellerbach
Bldg.

▲
22 Battery St.

▲
444 Market St.

▲
Mutual Benefit
Life Bldg.

▲
525 Market St.

LEGEND

■ Project Outline

FIGURE 19: View from the West
Market St. (near First



Matson Bldg.

444 Market St.

101 California St.
(under construction)

Mutual
Benefit
Life Bldg.

LEGEND

 Project Outline

← Project →

FIGURE 20: View from Market
and Main Streets

DESIGN

The project design is intended by the architect to complement adjacent structures and present a unifying element in the architecture of the site vicinity. The building base would be triangular in form with rounded corners. A building setback would be provided above the second floor, at a height of about 40 ft. This setback is intended by the architect to define the building base and provide pedestrian scale. The 40 ft. building base would relate to the bases of four structures on the south side of Market St.: the PG&E, Matson, Federal Reserve Bank (under construction) and Southern Pacific buildings.

Above the setback at 40 ft., a rounded semi-circular frontage would be located along Front St. A recess would be formed in the building tower at the midpoint of both the Market St. and Pine St. facades. The building would narrow approaching the intersection of Pine and Market Sts. with the "prow" oriented towards the foot of Market St. The tower form is intended by the architect to promote visual interest and reduce building bulk. The facade of the project would be approximately 35 percent glass and 65 percent granite. Both clear and green-tinted glass are under consideration; the granite treatment and coloration have not yet been determined.

The Urban Design Element of the San Francisco Comprehensive Plan provides a basis in City policy for summarizing the urban design implications of the proposed project (see Table 4, pp. 65 - 67).

TABLE 4: RELATIONSHIP BETWEEN APPLICABLE URBAN DESIGN PRINCIPLES AND POLICIES OF THE COMPREHENSIVE PLAN* AND THE PROPOSED PROJECT

URBAN DESIGN POLICIES

RELATIONSHIP OF PROJECT TO POLICIES

A. Policies for City Pattern

- | | |
|---|--|
| <p>1. Policy 1. "Recognize and protect major views in the city, with particular attention to those of open space and water." (p. 10)</p> | <p>The project site is adjacent to the Pine St. view corridor and one block south of the California St. view corridor. The project would not block existing long-range views as it would be surrounded by taller structures (to the north, 48-story 101 California St.; to the northeast, 32-story Mutual Benefit Life; to the south, 33-story 333 Market St.; to the southwest, 36-story One Metropolitan Plaza; to the west, 38-story 444 Market St.; and to the northwest, 33-story 100 Pine St.). No short-range pedestrian views would be blocked and new views of the Bay would be created from the project tower.</p> |
| <p>2. Policy 3. "Recognize that buildings, when seen together, produce a total effect that characterizes the city and its districts." (p. 10)</p> | <p>The proposed project would be similar in height and bulk to existing high-rise buildings which dominate distant views of the downtown and, therefore, identify the downtown area. The project would be shorter than most neighboring buildings, however, and would not be visible from distant viewpoints on the downtown skyline.</p> |

* City and County of San Francisco, 1971, Comprehensive Plan, Urban Design Element (page references shown in parenthesis).

SOURCE: Environmental Science Associates, Inc.

TABLE 4: RELATIONSHIP BETWEEN APPLICABLE URBAN DESIGN PRINCIPLES AND POLICIES OF THE COMPREHENSIVE PLAN* AND THE PROPOSED PROJECT (Continued)

3. Policy 6. "Make centers of activity more prominent through design of street features and by other means." (p. 12)	Landscaping would be installed at the building entrances and in the public gallery. The building would have widened sidewalks, multiple building entrances, a public gallery and a direct connection to the Embarcadero Station of the Market St. subway; these features are intended to shorten walking distances and improve pedestrian access.
4. Policy 8. "Increase the visibility of major destination areas and other points of orientation." (p. 13)	The project would be surrounded by taller structures and would not be visible on the downtown skyline from distant viewpoints.
B. <u>Policies for Conservation</u>	
5. Policy 6. "Respect the character of older development nearby in the design of new buildings." (p. 25)	The building design would contrast with the older structures in the vicinity. The 40-ft. project setback would relate to the bases of several nearby buildings on the south side of Market St.
C. <u>Policies and Principles for Major New Development</u>	
6. Policy 1. "Promote harmony in the visual relationships and transitions between newer and older buildings." (p. 36)	See Item 5 above. The project is intended to complement adjacent structures and provide a unifying element in the architecture of the vicinity. See Figures 2, 19 and 20, pp. 11, 62, and 63.
7. Policy 5. "Relate the height of buildings to important attributes of the city pattern and to the height and character of existing development." (p. 36)	See Items 2 and 4 above. Although taller than existing buildings on the site and older development in the vicinity, the project would be about 275 ft. shorter than the permitted maximum. The project would be surrounded by taller high-rise buildings.

TABLE 4: RELATIONSHIP BETWEEN APPLICABLE URBAN DESIGN PRINCIPLES AND POLICIES OF THE COMPREHENSIVE PLAN* AND THE PROPOSED PROJECT (Continued)

- | | |
|--|---|
| <p>8. Policy 6. "Relate the bulk of buildings to the prevailing scale of development to avoid an overwhelming or dominating appearance in new construction." (p. 37)</p> | <p>The project would exceed the Code bulk limitations; however, it would be similar in scale to the 101 California St. tower that will have a diameter of about 190 ft., and less bulky than the Hyatt Regency Hotel that has a length of approximately 400 ft. and the Southern Pacific Building at One Market Plaza that has a length of 275 ft. A recess in the building tower at the midpoint of both the Market St. and Pine St. facades, the setback at a height of 40 ft. to define the building base, and the rounded corners of the building base would reduce the apparent bulk of the project.</p> |
| <p>9. Principle 8. "The use of unusual shapes for tall office, hotel or apartment buildings detracts from the clarity of urban form by competing for attention with buildings of greater public significance. The juxtaposition of several such unusual shapes may create visual disorder." (p.34)</p> | <p>See Item 6 above. The project design would be unusual. The triangular base and rounded tower would be different in shape than other structures on gores along Market St. The project tower would be adjacent to the cylindrical 101 California St. Building, neither of which justify visual dominance by virtue of their public importance or function. The project would contrast with the predominant rectangular form of high-rise buildings in the downtown although its modern style would be similar to many nearby structures.</p> |
| <p>D. <u>Policies for Neighborhood Environment</u></p> | |
| <p>10. Policy 13. "Improve pedestrian areas by providing human scale and interest." (p. 57)</p> | <p>The project would feature widened sidewalks, retail shops and a landscaped public gallery to promote pedestrian interest. The 40-ft. building base is intended to provide pedestrian scale on Market St. This effect would be enhanced if the building base were finished with a different surface texture than the upper stories. The architect intends to design a well defined building base.</p> |

SHADOW

The project, in replacing the shorter existing structures on the site would create more extensive shadow patterns than presently occur. The project would be generally surrounded by taller buildings so that much of its shadow pattern would coincide with shadows cast by other structures in the vicinity. The project would not shade any public parks but would contribute to shadows on the plaza of the 101 California St. Building, presently under construction.

At all seasons of the year, early morning shadows due to the project would coincide with shadows cast from existing structures. Shadows cast by the PG&E, 333 Market St. and 111 Pine St. buildings would encompass the major portion of project shadows in the early morning, although new shadows would be produced on the 100 and 111 Pine St. office buildings.

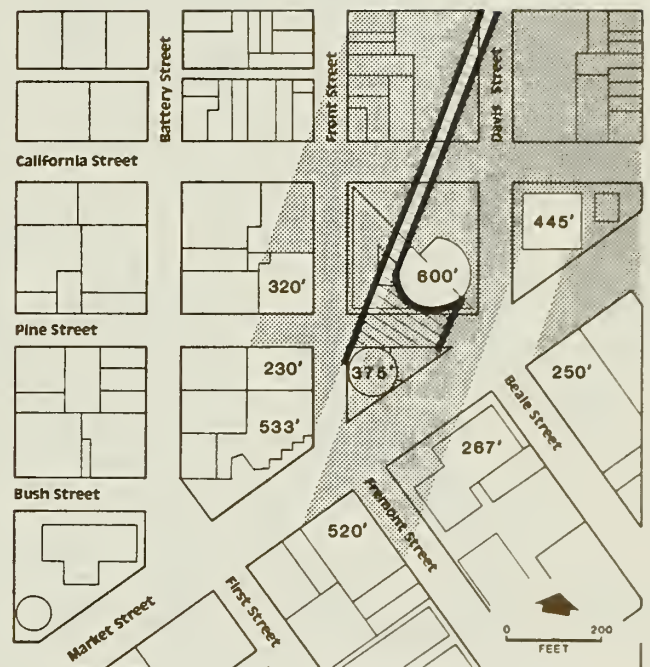
During the mid-day hours at all seasons except summer, project shadows would be included in those cast by One Metropolitan Plaza and 444 Market St., and those that will be cast by the 101 California St. tower (see Figures 21 and 22, pp. 69 and 70). In the early afternoon during winter months, the project would eliminate the corridor of sunlight between existing shadows and complete the shading of the plaza of the 101 California St. Building. During the summer at mid-day, the project would shade Pine St., north of the site between Front and Davis Sts. (see Figure 23, p.71). A portion of this area is presently shaded by the existing buildings on the site during these hours.

During the late afternoon hours of the spring, fall and winter, project shadows would be encompassed by those cast from 444 Market St. and 111 Pine St. As existing shadows from 444 Market St. presently shade the Mutual Benefit Life Building plaza during the winter months, the project would not increase shading of this plaza. The project would contribute to the shading of Market St. east of the site during the late afternoon hours of the summer, spring and fall.



8 A.M.

1 P.M.



4 P.M.



LEGEND



-  Existing Shadow
-  Project Shadow

FIGURE 21: Existing and Project Shadow Patterns in Vicinity of Project, Mid-December

SOURCE: Environmental Science Associates, Inc.



8 A.M./9 A.M.

1 P.M./2 P.M.



4 P.M./5 P.M.



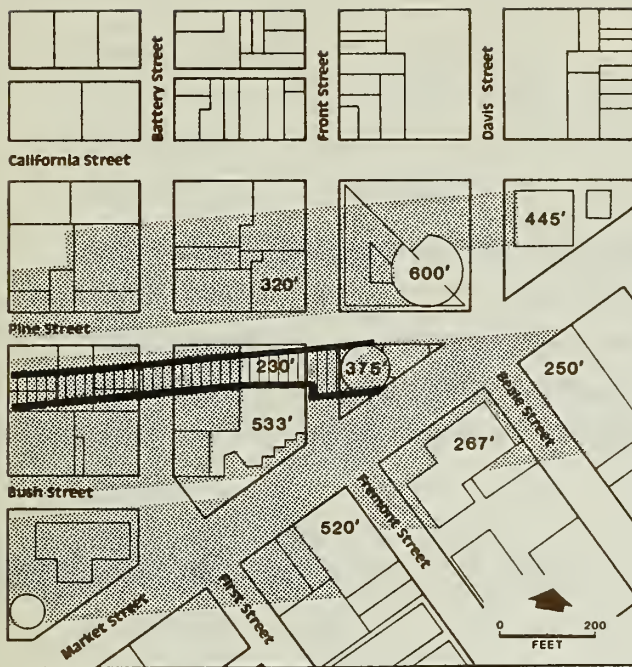
LEGEND

-  Existing Shadow
-  Project Shadow

Note: September shadows are Daylight Savings Time and therefore one hour later.

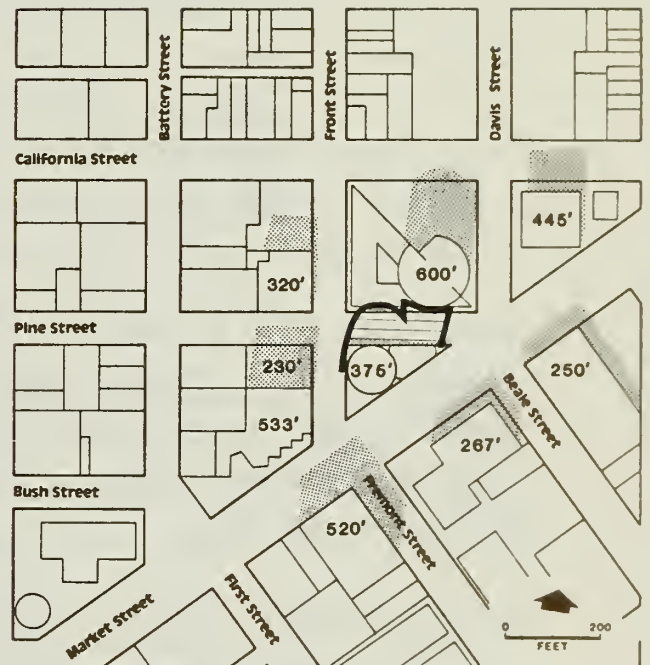
FIGURE 22: Existing and Project Shadow Patterns in Vicinity of Project, Mid-March and Mid-September

SOURCE: Environmental Science Associates, Inc.



8 A.M.



1 P.M.



4 P.M.



LEGEND

-  Existing Shadow
-  Project Shadow

Note: Daylight Savings Time

FIGURE 23: Existing and Project Shadow Patterns in Vicinity of Project, Mid-June

SOURCE: Environmental Science Associates, Inc.

WIND/1/

Wind speeds at pedestrian levels are expressed as a proportion of the freestream wind speeds above the wakes of surrounding buildings./2/ This proportion is called the wind speed ratio. The relationship between the proportion of freestream wind velocity and definitions of pedestrian-level wind speeds used in earlier San Francisco EIRs is shown below:/3/

<u>Wind Speed Class</u>	<u>Ratio of Pedestrian Level Wind Speed to Freestream Wind Speed</u>
Low	0.00 - 0.19
Moderately Low	0.20 - 0.29
Moderate	0.30 - 0.49
Moderately High	0.50 - 0.69
High	0.70 - 1.00
Very High	Greater than 1.00

Wind tunnel tests of localized wind speeds and directions at and near the project site were conducted using a scale model of the site and vicinity. The study included separate tests of west, southwest, and northwest winds under existing conditions, with the proposed project, and with an alternative building design./4/

For prevailing west winds, the existing near-surface wind speed classes are low or moderately low at all measured locations. The wind along Market St. accelerates from low wind speed ratios at Mechanics Plaza (0.10-0.12) to a moderately low ratio at 444 Market St. (0.26). Winds then decelerate to a low wind speed ratio along the southeast edge of the project site (0.09), and again accelerate to moderately low ratios (0.22 at the intersection of Market, Pine, and Drumm Sts. and 0.23 at the intersection of Market, California, and Drumm Sts.). A vertical vortex that forms from the 111 Pine St. Building turns some wind from Pine St. south onto Front St. Vertical vortices also form at the northwest and southeast corners of the 101 California St. Building (currently under construction).

Upon project completion, wind speed classes near the project would remain low to moderately low under west winds. The project would change the existing wind patterns in two ways. Firstly, the wind along Market St. would remain nearly constant as it moves northeast of 444 Market St. The wind speed ratio along the southeast edge of the project site would increase from 0.09 to 0.20, but changes in wind speed ratios at other locations would be in a range from approximately -0.02 to +0.05. Secondly, no vertical vortex would form at the southeast corner of the 101 California St. Building (near Mutual Benefit Plaza).

Under southwest winds, the existing near-surface wind speed classes are low or moderately low at all measured locations. There are notable differences in wind speed ratios on opposite sides of Market St., such as 0.10 at the intersection of Market, Pine, and Davis Sts. and 0.26 at the intersection of Market and Beale Sts. Wind speed ratios surrounding the project site are low. Vortices form at the southeast corner of 444 Market St. and on the southeast and northeast sides of the 101 California St. Tower.

The project would result in several changes under southwest wind conditions. Wind speed classes along Front St. at locations on both the north and south sides of Pine St. would increase from low to moderately low. The wind speed class on the north side of Market St. between Davis and Drumm Sts. would also increase from low to moderately low (a change in wind speed ratio of 0.17 to 0.28). The wind speed on the Plaza at Market and Fremont Sts., near the 333 Market St. Building, would decrease 42 percent, from a ratio of 0.24 to 0.14. The vortices on the east side of the 101 California St. Building would merge and would be further from Market St. Under southwest winds, some wind recirculation would appear in Bechtel Plaza southwest of Beale St.

Under northwest winds, the existing near-surface wind speed classes are low or moderately low at all measured locations. Wind along Market St. accelerates from a wind ratio of 0.14 on Mechanics Plaza to 0.24 along 444 Market St., and then decelerates to wind ratios of 0.14 at the intersections of Front and Market Sts., and 0.09 between Front and Davis Sts. Winds again accelerate to a wind speed ratio of 0.14 between Davis and Drumm Sts. This pattern is similar .

to that found with west winds but does not accelerate as much northeast of the project site. A vortex forms at the southeast corner of the 101 California St. Building, and there is some recirculation in Bechtel Plaza southwest of Fremont St.

Upon project completion, northwest winds would channel around the project and onto Beale and Fremont Sts., which nearly align with the northwest wind direction. This effect would result in several changes. Wind speed ratios would be approximately doubled east of the project, from low to moderately low (0.13 to 0.24) at the intersection of Market, Pine, and Davis Sts. and from low to moderate (0.13 to 0.33) at the intersection of Market and Beale Sts.

Wind speed ratios would increase about 65 percent on the plaza at the intersection of Fremont and Market Sts. (near 333 Market St.) and along Fremont St. near Market St. The vortex southeast of the 101 California St. Building would decrease and the recirculation in Bechtel Plaza would be eliminated. A recirculation zone would be created, however, on Market St. south of the project and 444 Market St.

NOTES - Urban Design

/1/ This section is based upon a study, entitled "Wind-Tunnel Studies of the 388 Market Street Building", December 1981, prepared by Dr. Bruce White as a subconsultant to Environmental Science Associates, Inc. A copy of this document is included as Appendix B, p. 276. Dr. White is Associate Professor of Mechanical Engineering at the University of California at Davis. His involvement with this project was independent of the University.

/2/ Meteorological instruments used for recording the available data on wind speeds and directions are placed so that they essentially measure freestream wind speeds. A summary of recorded wind speeds and directions in San Francisco are provided in Section III., Environmental Setting, p. 36.

/3/ Note that windspeed ratios are not actual wind speeds but ratios. Thus a point having "very high" wind speed ratio could still experience light winds on a near-calm day. Likewise, a point found to have "low" wind speed ratio could experience significant winds on an extremely windy day.

/4/ The tests included: (1) flow visualization tests, which placed a continuous stream of smoke at various locations to determine wind directions, and (2) hot-wire anemometer measurements of wind speed ratios and turbulent intensities at 20 surface locations on and near the project site.

C. EMPLOYMENT, HOUSING AND FISCAL FACTORS

PROJECT-RELATED EMPLOYMENT

About 980 permanent full-time jobs would be provided within the project. In the absence of specific information about tenants, this number was derived by applying an average sq. ft. per employee number by use to the estimated floor area that would be devoted to each use (see Table 5). The net increase in employment at the site, after subtracting approximately 600 existing jobs at the site in late-1981, would be about 380.

TABLE 5: PROJECTED PERMANENT EMPLOYMENT AT THE PROJECT SITE

<u>Employment Type</u>	<u>Building Space (Gross Sq. Ft.)</u>	<u>Space Per Employee (Sq. Ft.)</u>	<u>Projected Number of Employees</u>
Office	234,500	250 *	938
Retail	10,000	400 **	25
Building Maintenance	342,900	20,000 ***	<u>17</u>
TOTAL EMPLOYMENT			980

* Department of City Planning, "Office Housing Production Program (OHPP) Interim Guidelines," January 1982.

** California Office of Planning and Research, Economic Practices Manual, January 1978, pp. 35 -37.

*** High-rise buildings generally employ one janitor per 30,000 gross sq. ft. (Rodger Dillon, Secretary-Treasurer, Building Service Employees Union, Local 87, telephone conversation, April 17, 1980). The 20,000 sq. ft. per maintenance employee figure includes additional service personnel, such as security guards, building engineers and window washers.

SOURCE: Environmental Science Associates, Inc.

BAY AREA EMPLOYMENT MULTIPLIER EFFECTS

Secondary employment and income impacts would result from permanent project employment because each employed person would generate additional employment by his or her demands for goods and services, through the multiplier effect.

Assuming that the new jobs created by the project were primarily in finance, insurance, and real estate (the so-called FIRE sector), about 450 additional jobs in other sectors of the Bay Area economy would result from the growth of FIRE businesses./1/

The total number of Bay Area jobs that would be supported by growth in downtown employment due to the project would be about 830 (the 380 net project jobs plus the 450 jobs induced by the multiplier). The project would require about 250 person-years of construction labor, an average of about 150 full-time jobs throughout the 20-month construction period. About 400 additional person-years of employment would be generated in the Bay Area as a result of the multiplier effect of project construction.

OFFICE

- The proposed project would provide about 234,500 gross sq. ft. of office space. The proposed project, together with other major downtown office buildings under construction, approved, and under formal review as of August 1982, would result in approximately 17.4 million gross sq. ft. of office space (see Appendix D, Table D-7). See footnote to Table D-7 for an explanation of what projects are included in the office space projection. About 1.3 million gross sq. ft. of existing office space has been or is proposed to be demolished to clear the sites for these office developments. This results in a net addition of 16.1 million gross sq. ft. of new office space in Downtown San Francisco. For analysis purposes, the 16.1 million gross sq. ft. of net new space is used, for it refers to the amount of new construction in excess of existing space on each site in terms of gross sq. ft. of floor space. Historically, low vacancy rates together with rising rents suggested that the supply of new office space was less than demand. The increasing availability of downtown office space in the near future may result in a higher office vacancy rate and may lower the recent rapid increase in office rents. These market conditions would be beneficial for future lessees of office space.
- The growth of office space would continue the trend of regional growth in service sector and office headquarters employment. The newer buildings would be occupied primarily by larger tenants and those with the ability to pay higher rents. Because rent levels are lower for older buildings, the space

which is vacated by tenants relocating to newer buildings could become available for tenants who cannot afford the rents for new office space. /2/ A discussion of "Cumulative regional Development" appears in Appendix C.

HOUSING

As indicated in the previous subsection, (p. 75), the project would result in the generation of 980 full-time jobs, an increase in downtown office employment of approximately 380 jobs by 1985. To the extent that the project would attract out-of-area employees and contribute to the formation of additional households by existing area residents, it would also contribute to increase local housing demand and a jobs/housing imbalance.

- Probable housing impacts of additional downtown employment are discussed in the Five Fremont Center, Final EIR, (EE 80.268, Certification Date March 12, 1981), pp. 85 - 91 and the 101 Montgomery Street, Final EIR, (EE80.26, Certification Date May 7, 1981), pp. 289 - 329. These documents are available for public review at the Department of City Planning, Office of Environmental Review, 450 McAllister St., fifth floor, and are hereby incorporated by reference into this EIR pursuant to California Environmental Quality Act (CEQA) Guidelines, California Administrative Code, Title 14, Section 15140. Many people are attracted to employment opportunities in the Bay Area because wages are relatively high, but are unable to afford housing. Between 1982 and 1990, the projected cumulative San Francisco housing demand resulting from downtown office development (based on projects currently under construction, approved and under formal review) will be about 6,900 to 14,300 units (see Appendix C, Table C-2, p. 299). This demand could exceed the 12,000 unit supply projected by ABAG to be achieved between 1982 and 1990. This demand would exceed the projected growth in City housing stock by an estimated 9,000 to 12,000 housing units. This demand/supply imbalance is expected to cause some downtown employees to seek housing in other Bay Area locations. Based on the assumptions documented in 101 Montgomery Street, Final EIR, that between 15 percent to 30 percent of new employees would be expected to move to San Francisco and each household would be occupied by 1.4 workers, the project would result in 40 to 80 new households in San Francisco.

Residency patterns for new employees that would be generated by the project are based on interim guidelines issued by the San Francisco Department of City Planning in "Office/Housing Production Program" (OHPP), January 1982, and by approximate residency patterns of downtown office employees surveyed for five other recent Downtown EIRs (see Appendix C, Table C-2, p. 299). It is assumed that about 40 percent of project employees are expected to reside in San Francisco, 18 percent in the Peninsula, 30 percent in the East Bay, and 12 percent in the North Bay. According to the Department of City Planning interim guidelines, the proposed project would generate a gross demand for about 208 units of housing in San Francisco. Net housing demand, obtained by subtracting the demand caused by existing commercial uses on the site from that which would be generated by the project, would be for about 85 units.

The City housing formula uses the following assumptions: office use generates one employee for each 250 sq. ft., 40 percent of all employees would desire to live in San Francisco, 1.8 working adults would occupy each unit, and each employee would require an average of 400 sq. ft. of residential space. The 57 condominiums proposed would provide about 63 bedrooms and thus would entitle the developer to 63 housing credits according to the interim OHPP guidelines (January, 1982). The sponsor would meet 75 percent of the net housing demand on-site, or about 30 percent of the gross demand. The approximate number of new households to be generated outside of San Francisco as a direct result of the project are about 40 on the Peninsula, 60 in the East Bay, and 25 in the North Bay (see Appendix C, Table C-2, p. 299).

- The net amount of housing demand in San Francisco created by the proposed project would be about 0.3 percent to 0.7 percent of the City's projected housing growth from 1982 to 1990 (see Appendix C, Table C-2, p. 299). It is not possible to quantify the effects on San Francisco housing prices resulting from housing demand created by the proposed project, as housing demand and cost are also affected by regional growth in housing stock, employment, population and national economic trends.

Section 1341 of the San Francisco Subdivision Code requires provision of 10 percent low- and moderate-income housing in projects of more than 50 dwelling units, provided subsidies are available. No subsidies for such housing are presently available to developers./3/ The project would provide about 57 condominiums and would not include any low- and moderate-income housing. The sales prices of the 57 proposed condominium units, which would range from \$225,000 to \$270,000 each (1981 dollars), would probably be too high to qualify for low-interest financing that will be available to low- and moderate-income households under the mortgage assistance program being developed by the Mayor's Office of Community Development./3/

HOUSING AFFORDABILITY

To determine the affordability of housing in San Francisco for project employees, two major factors must be known: the household income of these workers and the price of housing. Although certain information is available

from the 1980 Census, all of the data have not yet been published. Without such specific information, a variety of sources have been reviewed to project housing affordability.

Income

A survey of downtown office workers by the San Francisco Planning and Urban Renewal Association (SPUR) in 1974 does provide information on salary ranges and estimates an average annual income level of \$16,300./4/ Given that the weekly earnings of nonsupervisory finance, insurance and real estate sector workers increased about 67 percent nationwide between 1974 and December 1981,/5/ inflating the \$16,300 figure yields an average salary of about \$27,300 for downtown office workers. Although the SPUR data have been inflated to 1982 levels, there is no way to verify that the distribution of job classifications has remained the same since 1974, nor whether actual salary levels have kept pace with or exceeded the rise in the nationwide Bureau of Labor Statistics index.

More recent published information on office workers in the Bay Area indicates that the 1980 annual salary for support and clerical personnel ranged from about \$8,000 to \$29,000./6/ Bay area wage information is not available for most professional occupational categories, with the exception of computer system analysts and drafters, which have mean annual salaries of \$25,740 and \$20,000, respectively;/6/ there are no known published data on income levels specifically for workers in San Francisco since the SPUR study. An October, 1981 survey of 60 percent of the tenants at 601 Montgomery St. revealed that about 34 percent of the office workers are professionals with salaries ranging from \$21,000 to \$300,000 (average \$90,000); 36 percent are middle management personnel with salaries ranging from \$12,000 to \$70,000 (average \$45,000), and 30 percent are secretarial/support workers with salaries ranging from \$10,000 to \$35,000 (average \$19,200)./7/ Tenants of the 601 Montgomery St. building are primarily law, insurance, and professional service firms which have a larger proportion of management and professional staff than clerical staff, thus contributing to the relatively high average salary (\$52,560) of this building's employees.

Without knowing the office tenants that would occupy the project, it is impossible to state with certainty the salaries of project employees. From the above information, annual salaries could range from about \$8,000 to \$300,000 and would probably average between \$25,000 and \$30,000.

Housing Supply

According to the 1980 Census of Housing, owner-occupied housing constitutes about one third of San Francisco's housing stock. The median value of this type of housing was \$103,900 in 1980 and the vacancy rate was 0.6 percent. October 1981 data from the San Francisco Board of Realtors show that the average selling price of a house in San Francisco was \$151,203 in 1981, and that prices ranged from \$95,000 to \$236,750 for homes sold in the week of October 1, 1981./8/

The 1980 Census data for rental housing shows that the median rent was \$266 in San Francisco and the vacancy rate was 2.7 percent. Inflating the median rent from April 1980, the date of the census, through October 1981 would yield a median rent of \$307 based on the 15 percent rise in the Consumer Price Index during that time. According to a rent survey by the Department of City Planning in 1980, median rents in the City ranged from \$289 for a studio apartment to \$588 for a unit with 3+ bedrooms, and averaged \$455 for all types of units. However, the revised Housing Element cautions: "The data do not represent the rental stock; they (the median monthly rents) are derived from a small sample of vacant units which are advertised for rent in the San Francisco Examiner/Chronicle."/9/ Since the Census data are derived from a more extensive sample, this information may reveal a more accurate representation of rental costs than selected newspaper advertisements. Because the median was \$266, the range of rental prices would be both higher and lower than this figure. While the census data reflect the entire rental stock, including residential hotel units which have lower rents than other types of rental dwellings, not all types of units would be available to new households. Stable households in the City may have occupied the same unit for many years. Lower-priced units probably are rented quickly and may not appear in newspaper advertisements.

Affordability

From the information available, it is impossible to document the income distribution of project office workers. Specific tenants for the building are not known. The survey information on income distributions contained in the 1974 SPUR study is about eight years old. The October, 1981 survey of 601 Montgomery St. tenants may not be representative of tenants of the project. Even accepting a median income of \$25,000 to \$30,000 for project workers, it is important to bear in mind that half would earn more and half less than this median.

- Based on available data, assumptions must be made in order to formulate conclusions regarding housing affordability. Table C-3 illustrates the housing affordable to individuals and households with a wide range of incomes, assuming 30% of gross household income is spent for housing. Assuming a 20% down payment, 30-year mortgages, and a 16% interest rate, Table C-3 illustrates that most project employees would not be able to afford ownership housing in San Francisco, although, depending on the number of workers per household, as many as one-third would probably be able to do so. Most project employees, except the lowest-paid clerical workers desiring to live alone, would probably be able to afford rental housing in San Francisco. These conclusions should be qualified because household circumstances vary. Housing affordability is determined not only by household income and price of housing, but also by equity in existing real estate, savings, debt, access to credit, interest rates, number of dependents, number of wage earners, tastes and preferences.

REVENUES TO CITY

The project would have a fair market value of about \$69 million (in 1981 dollars)./10/ Property is now assessed at one hundred percent of fair market value. Based on the property's full assessed (or market) value, the project would generate about \$690,000 in revenue to the City's General Fund from the \$1 (per hundred dollars of assessed value) non-bond property tax, a net increase of about \$607,000 over the non-bonded property tax revenue generated by the site in 1981.

The building would also generate property tax revenues to be used to retire bond debts. The tax rate at which these revenues would be generated in 1985 would depend on the amount of principal and interest payments due in that year and the total assessed value of property in San Francisco. The rate in 1981-82 is \$0.19 per hundred dollars of assessed value. If that were still the rate in 1985, when the building would be occupied, revenues from the building would be about \$131,000, a net increase of about \$115,000 above 1981 revenues.

Payroll tax is paid on the earnings of about 580 existing employees at the project site. At a rate of 1.5 percent of total earnings, payroll tax revenues presently total about \$217,500./11/ Payroll taxes would be paid to the City General Fund on the earnings of approximately 900 of the 980 employees in the project. The remainder would be exempt from the tax either because they would work for banks or insurance companies (which are not required to pay San Francisco payroll taxes), because they would work for small, retail tenants with tax liabilities less than \$500, or because they would be owners of businesses (who are also exempt). Based on an average wage of \$25,000 for office workers, payroll tax revenues from the project would be about \$337,500, a net increase of about \$120,000 above existing revenues./11/

Sales tax revenues are generated by both employee expenditures and sales from the two retail stores on the site. The average office worker in downtown San Francisco is estimated to make taxable expenditures of \$1,070 annually in the central business district./12/ Sales tax revenues allocated to the City and County of San Francisco are 1.25 percent of taxable sales. Sales tax revenues generated by existing uses on the project site are about \$8,000 from employee expenditures and \$33,000 from retail sales per year./13/ Estimated sales tax revenues generated for the City by project employees expenditures would be about \$12,700, a net increase of about \$4,700. Assuming \$120 in taxable sales per sq. ft. of retail space, the retail uses of the site would generate about \$15,000, a net decrease in City revenues of about \$18,000.

The project sponsors pay a gross receipts tax on their rental income from the existing buildings on the site. Total annual rental income is about \$2,078,700./10/ At a tax rate of 0.3 percent, annual gross receipts tax revenues from the existing buildings are about \$6,240. The two existing retail stores also pay a gross receipts tax on annual sales volume. Based on

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an annual income of about \$2.65 million, the tax from retail use is about \$8,000 per year. Based on estimated total annual receipts from rents of about \$6.2 million in 1981 dollars, tax revenues from rental income from the project (assuming full occupancy) would be about \$18,600.

General Fund revenues for the City and County of San Francisco from the project would total about \$1.04 million, based on the tax rates and fees in effect in late 1981. General Fund revenues from the existing uses on the site totaled about \$343,000 in 1981; the project would result in about a \$692,000 net increase in General Fund revenues.

MUNI

The City's General Fund provides a subsidy to the Municipal Railway's operating budget that covers the difference between Muni's costs and the revenue Muni receives from fares and from federal and state governments. This subsidy represents the cost of Muni to the City. The Muni average General Fund deficit to the City per ride in 1981-82 is estimated by Muni at \$0.39 per ride./14/ Assuming that about 29 percent of the employees who occupy the existing buildings on-site ride Muni to and from work, the existing General Fund subsidy to Muni required by commuting on-site employees is about \$31,760 per year./15,16/ Assuming the 1981-82 subsidy would remain the same in 1985 and that 29 percent of the project employees would ride Muni to work, the project would create the need for a General Fund subsidy to Muni of about \$51,870 at 1981 costs, a net subsidy increase of about \$20,110./17/

- The project would help pay for the Muni deficit through its revenue contributions to the General Fund. In the 1980-81 budget, 10 percent of discretionary General Fund revenues were allocated to Muni. If this percentage were to remain constant, the project would generate around \$103,500 (in 1981 dollars) in General Fund Revenues to Muni in 1985. The San Francisco Board of Supervisors, on April 27, 1981, approved an ordinance (224-81) to assess new downtown commercial development to support Muni. The plan called for levying a one-time fee of up to \$5.00 per gross square foot upon construction of new downtown office space. The ordinance, currently in litigation, would contribute funds for maintaining and augmenting Muni transit services.

- On February 1, 1982 the Board of Supervisors approved by resolution a measure declaring its intent to form a Core Area Transit Maintenance District, determining that a portion of public transit is provided Downtown in lieu of public parking places, and to impose upon real property within the area an annual payment for transit maintenance based on gross floor area. The project site is within the proposed district and would be subject to the legal assessment provisions finally adopted.
- On July 12, 1982 the Board of Supervisors decided to postpone acting on the proposed transit maintenance assessment district until January 1983. This transit assessment district may no longer be applicable since both the Mayor and Board of Supervisors have withdrawn the proposal and the Mayor may intend to substitute an increase in business taxes. The business tax increase would be in the form of a ballot measure presented to the voters; implementation would depend on voter approval (and withstanding potential legal challenges). According to a memorandum entitled "Muni's Plans to Accommodate Downtown Growth" issued by Dean Macris, Director of Planning (August 5, 1982), Muni expects to be able to meet projected cumulative demand due to downtown office development without new City taxes.

BART

Sales tax revenues generated on the site by the 1/2 percent BART sales tax are presently about \$16,500 a year (\$13,300 from retail sales and \$3,200 from employee expenditures). Of that amount, BART receives \$12,375 directly, and the remaining \$4,125 is distributed by the Metropolitan Transportation Commission among BART, Muni and A-C Transit. Projected sales tax revenues from the 1/2 percent BART sales tax generated by the project employees would be about \$5,080 and about \$6,000 would be generated from on-site retail sales, for a total of about \$11,080 in revenue. Of this total, BART would receive \$8,310 directly, and the remaining \$2,770 would be distributed by the Metropolitan Transportation Commission. The project would result in a net decrease of about \$4,065 in revenue directly to BART.

BART fares cover about 40 percent of BART costs. For each BART passenger trip an average of \$1.00 is paid by fares, and an additional \$1.50 in costs must be supported by some other revenue source. Over 86 percent of this additional cost is supported by the special BART 1/2 percent sales tax. It is estimated that about 15 percent of the employees who occupy the existing buildings ride BART to work./15/ The estimated annual costs to BART that are not covered by these riders' fares are \$63,180./19/ BART's revenues from the sales tax and BART's share of property tax revenue from the site total about \$18,700. BART's net deficit as a result of the activities at the site is estimated to be about \$44,480. Assuming the 1981 deficit per rider would be the same in 1985 and that 15 percent of project employees would ride BART to work, the project would generate a deficit of about \$103,200./20/ After subtracting BART's revenues from sales and property taxes which would be generated by the project, BART's net deficit would be about \$42,400.

CUMULATIVE FISCAL ASPECTS

Since 1979, five studies have been prepared which have analyzed fiscal effects of development in the City's C-3-0 Downtown Office District. The studies were prepared by: Recht, Hausrath and Associates, Sedway/Cooke, Gruen Gruen + Associates (GG+A), Arthur Anderson and Co., and David Jones, and are compared and discussed in the 101 Montgomery Street Final EIR, EE 80.26, pp. 189-199.

This document is available for public review at the Department of City Planning, Office of Environmental Review, 45 Hyde St. These studies differ in various ways: in the questions they ask, the data sources they use, the methodologies they employ, and the conclusions they draw. Table 6, p. 86, compares the purpose, study methodology, and conclusions of the five studies.

The project would probably have an initial fiscal benefit. Because revenues to the City would probably increase at a slower rate than costs, due to Proposition 13 limitations on property tax increases, there would be a time when cumulative costs of providing services to currently proposed and approved development would be higher than revenues provided (assuming no new revenue sources are found and the rate of new development declines).

Proposition 13 limits the amount of increased assessed valuation on property, in the years in which the property is not sold, to 2 percent annually. When a property is resold, it can be reassessed based on its market value. As private homes change ownership more often than commercial or office property /21/, the property tax revenues from the residential portion of the project would increase at a faster rate than the property taxes from the other uses.

NOTES - Employment, Housing and Fiscal Factors

/1/ Projections are based on the Bay Area Input-Output Model from Cooperative Extension Service, University of California, Berkeley, San Francisco Bay Area Input-Output Model 1967-1974, July 1978. A multiplier of 1.2 was used for FIRE and 1.6 for construction.

/2/ ABAG, April 1981, Bay Area Office Growth, Working Papers on the Region's Economy, Number One.

/3/ B. Smith, Housing Specialist, Office of Community Development, telephone communication, February 17, and March 18, 1982.

/4/ San Francisco Planning and Urban Renewal Association (SPUR), Impact of Intensive High Rise Development in San Francisco, Detailed Findings, June, 1975.

/5/ Data are inflated by about 67 percent, the national average percentage increase in weekly earnings of nonsupervisory finance, insurance and real estate employees between 1974 and the end of 1981 (U.S. Bureau of Labor Statistics, Monthly Labor Review, June 1975 and February 1982).

TABLE 6: SUMMARY OF RECENT STUDIES ON FISCAL IMPACT OF DOWNTOWN DEVELOPMENT

STUDY, AUTHOR, DATE	PURPOSE OF STUDY	DATA SOURCES	STUDY METHODOLOGY	CONCLUSIONS
"Fiscal Concerns" in Downtown San Francisco Conservation and Development Planning Program, Phase I Study, Sedway/Cooke, et al., October 1979, pp. 56-59	To qualitatively assess the likely fiscal impact of new development in the C-3 area under Proposition O.	SPUR STUDY (1975)	SPUR cost/revenue estimates for downtown in 1973 and for projected growth 1974-1990 were assumed. Proposition 13's effect on revenues and the possible need for increased transportation infrastructure were considered. Generalized conclusions about fiscal impact of new development were drawn.	1) After Proposition 13, "costs may exceed revenues in the downtown by as much as 25%." 2) "[N]ew downtown development will not solve the city's growing fiscal problem; without new revenue sources, development will make it worse in the long run."
Downtown Highrise District Cost Revenue Study, Arthur Andersen & Co., November 1980	To quantify for 1976-77 and 1978-79 how much revenue the C-3-0 area generated and how much it costs to provide city services to the area.	Data compiled from city records and through conversations with city officials.	Only revenues generated within the C-3-0 and costs of providing services to the C-3-0 counted. "The principle guiding the study methodology was to calculate the amount of revenue that San Francisco would lose and the costs that could be reduced if the Downtown Highrise District were a separate city."	The C-3-0 generated \$56.79 million in 1976-77, or 61% more than the cost of city services to the area. In 1978-79, revenues were \$53.29 million, or 48% greater than costs.
"Fiscal Considerations" Appendix C, 101 Montgomery Street FETR, Recht Hausrath & Associates, January 1981.	To draw generalized conclusions about "how new development downtown in a post-Proposition 13 environment is likely to change the City's fiscal health from what it would be without new development."	SPUR Study, city records and conversations with city officials.	Under alternative assumptions about the cost/revenue balance in existing buildings and in new buildings, the fiscal impact over time of new development was compared to that of no new development.	"[A]n on-going process of new development would improve the City's fiscal situation. This beneficial impact would cease if new development were halted. This conclusion is tentative due to uncertainties about increased Muni costs."
Downtown Highrise District Cost/Revenue Study, David Jones, February 1981.	To quantify for 1978-79 the revenues generated by businesses in the C-3-0 and the service costs imposed on the city and BART by the C-3-0.	Arthur Andersen study.	The Jones study differs from the Andersen study primarily as follows: 1) Costs of BART (but not revenues to BART) are included; 2) Only revenues paid by businesses and building owners are considered; 3) Muni deficit is computed differently; 4) Most costs are estimated as a percentage of revenues rather than on the basis of actual service demand in the C-3-0.	The C-3-0 imposed costs of \$94.4 million on San Francisco and BART, or 125% more than the revenues the area's businesses and building owners generated to San Francisco.
Fiscal Impacts of New Downtown High-Rises on the City and County of San Francisco, Gruen Gruen + Associates March 1981	To quantitatively estimate city revenues from the C-3-0 and costs of serving the C-3-0 in 1998, assuming the addition of 30 million square feet of building space in the C-3-0 between 1981 and 1998.	Arthur Andersen study; data compiled from city records and through conversations with city officials.	"Only direct effects are considered." Costs are only measured for services "provided within the physical limits of the C-3-0 district" and revenues are limited to "taxes on buildings within the district and the activities that take place within those buildings." Assumes the Arthur Andersen study is accurate and builds upon it.	In 1980, revenues from the 39 million square feet of building space in C-3-0 were 1.66 times as large as costs. In 1998, after completion of the 30 million square feet of new space, revenues from the entire 69 million square feet of C-3-0 building space would increase to 1.92 times as large as costs.

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/6/ U.S. Department of Labor Statistics, "Area Wage Survey for the San Francisco - Oakland, CA, Metropolitan Area," March, 1981.

/7/ Lynn S. Flach, Trammell Crow Company, written communication, November 6, 1981.

/8/ San Francisco Board of Realtors, "Multiple Sales Service," October 5, 1981. This information includes all homes sold from February 11, 1981 to October 1, 1981.

/9/ San Francisco Department of City Planning, Proposed Revision of the Residence Element of the Comprehensive Plan, January, 1982.

/10/ Kwan So, Honorway Investment Corp., letter communication, October 8, 1981.

/11/ Downtown office workers are assumed to have an average annual salary of about \$25,000 (see discussion of Housing Affordability - Income, p. 79).

/12/ Taxable expenditures within the central business district per office worker were \$715 per year in 1974 (SPUR, 1975, see note /9/ above). Between 1974 and 1981, average weekly earnings of finance, insurance, real estate and service workers rose nationally about 50 percent: $1.50 \times \$715 = \1072 .

/13/ Sales tax revenues generated by employees at the existing project site are about \$8,040 per year (600 employees x \$1,072 taxable sales per employee x 1.25 percent). Based on gross receipts of \$2.65 million for the existing retail store and a tax rate of 1.25 percent, on-site retail sales generated about \$33,125 per year for the City and County of San Francisco.

/14/ Bruce Bernard, Muni Chief Accountant, telephone communication, December 28, 1981. Based on 1981-82 Muni additional cost per ride (i.e. marginal cost) of \$0.71 and average fare revenue per trip of \$0.32.

/15/ Office of Environmental Review (OER), "Guidelines for Environmental Evaluation - Transportation Impacts", October 1980.

/16/ Assuming 260 work days per year, two rides per day and absenteeism of 10 percent (holidays, vacations, sick days), each worker will ride an estimated 468 times per year. Therefore, the cost is: 600 workers x 29 percent ride Muni x 468 rides per year x \$0.39 deficit per ride = \$31,760.

/17/ 980 workers x 29 percent ride Muni x 468 rides per year x \$0.39 deficit per ride = \$51,870 total subsidy to Muni due to project. $\$51,870 - \$31,760 = \$20,110$ net increase in subsidy to Muni due to project.

/18/ San Francisco Ordinance No. 224-81, approved by the Board of Supervisors on April 20, 1981.

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/19/ 600 workers x 15 percent ride BART x 468 rides per year x \$1.50 cost per ride = \$63,180.

/20/ 980 workers x 15 percent ride BART x 468 rides per year x \$1.50 cost per ride = \$103,200.

/21/ H. McKenzie, Assistant Chief Appraiser, San Francisco Assessor's Office, telephone conversation, February 17, 1982.

D. TRANSPORTATION

DEMOLITION, EXCAVATION AND CONSTRUCTION

During the 20 month construction period, transportation impacts would result from truck movements to and from the site during demolition, excavation and construction activity. Demolition and excavation would require about two months and one month, respectively. Trucks are expected to follow haul routes approved by the Department of Public Works, probably via Front and Clay Sts. to the Embarcadero and James Lick Freeways to Peninsula disposal sites; return trips would probably be via Washington, Battery and Davis Sts. Post-excavation construction activity would require truck movements to deliver construction materials.

Any truck traffic from 7:00 a.m. to 9:00 a.m. or from 4:00 p.m. to 6:00 p.m. would conflict with peak-hour traffic, particularly at freeway access points. Site access would probably be via Pine and Front Sts. Materials storage would be provided on site. Sidewalks on the east side of Front St. and south side of Pine St. would be closed for the construction period. The parking lanes on these streets would be closed to allow pedestrian travel under covered walkways in the streets. This would result in decreased capacity of traffic lanes during peak hours and would contribute to congestion. A portion of the sidewalk on the north side of Market St. would also be closed during construction. It is anticipated that pedestrian travel would be allowed on the remaining sidewalk width and that the traffic lanes on Market St. would not be affected by construction.

● PROJECTED TRAVEL DEMAND

The transportation analysis covers the time period of 4:30 - 5:30 p.m. for

peak-hour effects of project and cumulative development on transportation systems serving the downtown area. The p.m. peak hour is used because the capacity relative to demand is less than during the a.m. peak and the effect on congestion of additional demand created by projects proposed and under construction in the City would be highest.

The proposed project would generate approximately 750 person trips during the p.m. peak hour (about 655 office, 55 retail and 40 residential). Because existing office and retail uses on the site generate an estimated 530 peak-hour person trips, the net number of new peak-hour project trips would be about 220./1/ Table 7 shows the projected travel demand by travel mode. Trip assignments are based on the modal splits recommended by the Office of Environmental Review./2/

Almost four percent of the floor area proposed in new downtown development is residential. As a result, travel demand generated by retail and office space would probably be reduced since some related commute trips would be intra-City.

A total of 17.4 million gross square feet of new office space is proposed, approved or under construction in the City. Tables D-6 and D-7, in Appendix D, show the projects included in the cumulative analysis. Approximately 1.3 million gross square feet of existing office space would be replaced by the proposed development, resulting in about 16.1 million gross square feet of net new office space. This growth, and the 0.5 million gross sq. ft. of net new retail construction, would generate approximately 48,000 person trip ends during the weekday p.m. peak hour.

Hotel projects have not been included in the cumulative analyses because hotel uses have different peaking characteristics from office buildings and generally do not significantly affect peak-hour traffic or transit. Residential projects have not been included because residential travel in the downtown is generally in the contra-commute direction during peak-hours and because the office trip generation rate and modal split distribution are predicated on the assumption that housing would be available in the City. Thus inclusion of residential projects would be double counting of project generated travel.

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In this and other San Francisco EIRs, a land-use type of approach has been used to estimate employment and the resultant transportation impacts of both the proposed project and cumulative development. An alternate type of approach is to forecast travel demand based upon regional projections of employment share (employment trend approach).^{/3/} Appendix D contains a discussion of the differences between the two approaches.

Peak-hour travel by mode for the project and other office developments in the greater downtown area is shown in Table 7. The modal assignments have been made assuming existing travel patterns and do not attempt to predict any modal shift (see Appendix D for further discussion). As the bridge and freeway system serving the City is currently near capacity during peak hours, and as parking availability is limited, the present population of persons traveling by single-occupant auto might be expected to change in the future. Much of the City-wide peak-hour increase might be expected to be accommodated by a shift from single-occupant automobile to ridersharing or public transit.

● TABLE 7: PROJECTED* PEAK-HOUR PERSON-TRIPS BY TRAVEL MODE

Modal Type	Projects** Under Construction	Approved Projects**	Projects Under Formal Review**	388 Market Project	Total
Automobile	6,980	4,600	3,570	80	15,230
Muni	5,480	3,620	2,820	80	12,000
BART	3,700	2,440	1,910	40	8,090
A/C	1,720	1,120	860	20	3,720
SamTrans	250	170	130	-	550
SPRR	940	620	480	10	2,050
GGT	820	540	420	10	1,790
Ferry	180	110	90	-	380
Other	<u>1,480</u>	<u>1,220</u>	<u>1,510</u>	<u>20</u>	<u>4,190</u>
	21,550	14,440	11,790	220	48,000

* Projections based upon distribution shown in Table D-2, Appendix D, p. 308.

** Individual projects are listed in Table D-6, Appendix D. The 388 Market St. project has been separated here from the projects under formal review totals.

TRANSIT

Estimated transit ridership in relation to capacity is shown in Table D-9 in Appendix D.

The 39 Muni lines with stops within 2,000 ft. of the project site would carry about 37,800 outbound p.m. peak hour trips with the addition of demands from the 16.1 million gross sq. ft. of net new office development and 0.5 million gross sq. ft. of net new retail space./4/ The project would generate approximately 80 new p.m. peak hour Muni trips. Project-generated Muni riders would be about 0.7 percent of the 16.1 million gross sq. ft. of cumulative development.

Due to restrictions on automobile use which could result in a transportation mode-shift, new Muni patronage attributable to the project may potentially exceed the estimated 80 p.m. peak hour person trips shown on Table 7.

The addition of the projected cumulative development ridership (12,000 p.m. peak-hour) would cause most of the affected Muni lines to operate over capacity if no additional capacity is added. (This would also be the case for the BART transbay, Southern Pacific and SamTrans.) As the cumulative demand increases, the length of time of peak loadings will increase, spreading peak-of-the-peak conditions over time. As some lines only operate during heavy demand periods (for example, express service for one to two hours during peak periods), there may not be additional capacity available to allow spreading over time without adding more runs. (Additional runs may not require increases in vehicle fleet size as the additional runs would be extending the peak period level of service over a longer period of time. Additional runs would cause increases in operating and maintenance costs.)

Assuming that existing funding continues and proposed expansion occurs, the future load factors on the transit agencies would be as shown in Table D-8 in Appendix D.

● Other Transit

BART is projecting a peak hour capacity of 16,500 seats transbay (eastbound)

and 11,000 seats westbay (westbound). Recommended maximum capacity would be 24,750 and 16,500 respectively. Average loadings including ridership from the projected 16.1 million gross sq. ft. of net new cumulative development would not be over capacity with the anticipated capacity. AC Transit does not have any increases proposed for its transbay service and would therefore be operating at 99 percent of its recommended maximum capacity with the cumulative demand. SamTrans is proposing to have a capacity of between 4,800 and 5,000 seats per hour on its San Francisco routes. Recommended maximum capacity would be 6,250 riders. Average future loadings on SamTrans would be under seated capacity when the anticipated capacity becomes available. Southern Pacific/CalTrans does not have any proposals to increase seated capacity; however, station improvements including additional parking are proposed. Southern Pacific would therefore operate in excess of its recommended maximum capacity with the cumulative demand. Golden Gate Transit is proposing to increase peak period (6-10 a.m.) motor coach capacity by 25% over existing levels and to increase ferry service by addition of another Larkspur Ferry, an increase of about 70% over existing service. Average future loadings on Golden Gate Transit would not exceed capacity when the proposed additions become available./5/

PEDESTRIANS

A public pedestrian gallery through the proposed building would connect the Market St. and Pine St. sidewalks (see Figure 3, p. 12). There would also be direct pedestrian access to the Embarcadero Station of the Market St. subway from the lower basement level of the project. The design of the building would feature rounded corners and recessed doorways to the public gallery. The recessed doorway design would allow pedestrians to stand out of the way of the Market St. or Pine St. sidewalks.

- The project would increase p.m. peak-hour pedestrian traffic on sidewalks around the block by 1-4 pedestrians per minute (existing flows are 10-40 pedestrians per minute). Pedestrian trips from other developments, planned for completion by 1984 within a 2,000-foot walking distance of the site, would increase pedestrian traffic on sidewalks around the project block by 100-200 percent. A detailed breakdown of cumulative pedestrian impacts is contained in Appendix D, Table D-10.

The Front St. sidewalk would become the most congested of the sidewalks around the block where pedestrians would move at the rate of about 90 per minute, principally in the southbound direction. The sidewalk would be operating during the peak hour at about 50 percent of capacity. Under such conditions pedestrians have a partially restricted choice of walking speed and pass each other with difficulty, but maintain an average speed which is at least 80 percent of that of free flow. The south crosswalks at the intersection of Pine and Front Sts. would operate at about 85 percent of capacity. Other sidewalks and crosswalks in the area would operate under better conditions, with no notable delays occurring due to crowding./6/

The project would create two new curb cuts on Front St., an 11-ft. cut for a single lane in-and out-ramp to the 47-space basement parking garage, and a 26-ft. curb cut for two truck or service vehicle loading spaces (see Figure 4, p. 13). The curb cuts would be separated by a distance of six and one-half ft. Each of the loading spaces would typically be used two or three times per hour. During peak hours there would be about one vehicle trip in or out of the garage every minute. Since pedestrians would be passing at a rate of more than one per second, there would be conflicts on the sidewalk between pedestrian and vehicles which would delay both, but particularly the vehicles.

The Pine St. end of the pedestrian gallery of the proposed building would be situated directly across the street from an entrance to the lobby of 101 California St., now under construction. About 3,500 pedestrian trips would be directed toward Market St. from this building during the p.m. peak-hour. While most of these trips would be made from other exit points of the building and across Pine St. in crosswalks at intersections, many would cross Pine St. at mid-block, about 100 ft. from an intersection. This condition would be encouraged by the existence of the pedestrian gallery in the proposed 388 Market St. building. Pedestrians would be crossing two traffic lanes and two curb lanes of Pine St., a one-way street carrying about 500 vehicles per hour during the p.m. peak-hour, and would be afforded some "crossing protection" by the traffic signal at the upstream intersection at Market St.

VEHICLES

Because no stopping is allowed on Market St. at the project site, access to the building would be from Pine or Front Sts. at curbside, or by use of the loading docks or ramp to the basement parking garage on Front St. The net increase in vehicle trips to the project block, during peak hours, would be about 75. Of this total, an estimated 30-50 of the trips would include left turns from Front St. onto Pine St., a maneuver which would be made within a distance of about 80 ft. from the parking garage out-ramp to the Pine St. intersection. The left-turn lane now backs up during peak-hours, and will back up more as other developments in the area increase pedestrian traffic in the west crosswalk across Pine St. at the intersection. The maneuver for vehicles exiting the project parking ramp and turning left on Pine St. may be made awkwardly, at a sharp angle to the traffic flow. Pedestrian/vehicle conflicts could be reduced by modification of the traffic signalization at this intersection, if such action were determined appropriate by the Department of Public Works. Vehicle trips to the project garage or to the loading docks would be delayed in crossing the busy sidewalk on Front St., where pedestrians would be passing at a rate of 90 per minute.

Except for operating conditions associated with the left-turn movement onto Pine St., the project trips would not result in a noticeable change in service levels at any intersections. However, other developments planned for completion by 1984 within 2000 ft. of the site (see Appendix D, Table D-5) would increase peak-hour traffic on streets serving the project trips by about 10 percent. Traffic would still flow freely, except where increased pedestrian traffic in crosswalks would impede turning movements at intersections as noted above.

Front St., between California and Sacramento Sts., has been identified as a potential lunchtime mall which would have restricted vehicular traffic./11/ This proposal, which would occur in three phases, has not been formally adopted by the Department of City Planning. If such a mall were developed, however, the number of turning movements would be increased at California and Sansome Sts. and at California and Drumm Sts., the closest northbound streets to Front St. There is sufficient capacity at mid-day so that the vehicles diverted from Front St. over the several nearby streets would not cause

increased congestion./7/ Development of a noontime pedestrian mall on Front St. at the proposed location would not affect operating conditions at the intersection of Front and Pine Sts.

- Cumulative vehicular and pedestrian traffic would degrade service levels at two of the intersections shown in Table 8. After cumulative development, the freeway ramp intersections at Mission-Main and Mission-Beale would provide service level F during the p.m. peak.

● TABLE 8: LEVELS OF SERVICE AT INTERSECTIONS IN THE VICINITY OF 388 MARKET STREET DURING PEAK-HOURS

	MISSION- BEALE (PM)		MISSION- MAIN (AM)		MARKET- FREMONT (PM)		MARKET- DAVIS (PM)		PINE FRONT (PM)	
	LOS*	V/C**	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C
Existing	D	0.89	D	0.85	A	0.36	A	0.49	A	0.42
With cumulative development***	F	1.56	F	1.29	A	0.39	A	0.52	A	0.45
With 388 Market	F	1.60	F	1.32	A	0.40	A	0.53	A	0.46

*LOS stands for Level of Service which is defined in Table D-1, Appendix D, page 304.

** V/C stands for volume to capacity ratio.

*** The cumulative development is listed in Table D-6, Appendix D. The 388 Market Street project has been separated from the cumulative development in this table.

PARKING

- Construction of the project would result in the demolition of the subsurface parking garage, containing about 40 long-term spaces, under 340 Market Street. About 47 parking spaces would be provided in two basement levels accessible via a single lane ramp from Front St. (see Figure 3, p. 12). The parking ramp would be controlled by vehicle-actuated signals which would give priority to outbound vehicles. Vehicles would enter or leave the garage about

once every three minutes during the peak hour. Conflicts between inbound and outbound vehicles would therefore be infrequent and would be resolved within a minute or two. Inbound vehicles encountering outbound vehicles would be stopped briefly on Front St. and would principally be delayed in accessing the garage by conflicts with sidewalk pedestrian traffic. Conflicts between pedestrians in the Front St. sidewalk and vehicles in the ramp curb cut would be the same as for a two lane ramp design, as the number of garage parking spaces generating vehicle trips would be the same.

- The proposed building would create a gross parking demand for about 345 long-term parking spaces, and 65 short-term spaces, and a net parking demand for about 180 long-term and 5 short-term spaces. The project sponsor proposes to designate 21 of the 47 proposed parking spaces to serve the 57 condominium units; about 26 spaces would be for the commercial portion of the building. Overall, there would be a deficit of about 225 spaces, including removal of the existing 40-space garage.

That the project would not meet the demand created for long-term parking is consistent with the overall policy contained in the Revisions to the Transportation Element of the Master Plan, to discourage additional long-term parking spaces in the downtown "core" area. (No parking is required by the City Planning Code for office uses in the C-3-0 District.)

- Because demand exceeds supply at all the garages and at curbside within walking distance of the site, there can be no increase in the number of vehicles parked in the project vicinity off-site. Therefore, the effect of the project would be to displace some commuters from automobile use to transit. This effect has been discussed in the Projected Travel Demand section of this report (pp. 88 - 92).
- Long-term parking demand for cumulative office development in the greater downtown area has been estimated to be about 15,600 spaces (including the project). The project would represent 2.5 percent of the total demand. Long-term parking demand has been assumed to be distributed over the greater downtown and south of Market areas rather than being concentrated near the proposed project location. Long-term parking demand is typically work (employee) related and is more likely to be influenced by cost rather than by

location (see discussion in Appendix D). A recent survey by the Department of City Planning shows that there are about 37,000 off-street parking spaces in the C-3 district and an additional 6,500 spaces in the area bounded by The Embarcadero, Folsom, Eighth and Bryant Sts./8/ Based upon average occupancy, about 4,100 spaces are available on a daily basis. The cumulative demand for the whole downtown area would create a net deficit of 11,500 spaces. Parking demand has been based upon existing travel patterns and is not dependent upon the availability of parking spaces or by the ability of the freeway and bridge system to carry the additional demand. Freeway and bridge capacity into downtown is essentially fixed at existing levels as major construction would be required to add new capacity. Therefore, the net deficit of 11,500 spaces does not mean that 11,500 autos would be driving on City streets in search of parking. Rather, the travel demand represented by the parking deficit would most likely shift to ridesharing or transit. Increased ridesharing would not only reduce parking demand but would also reduce traffic impacts from the "worst case" impacts shown in Table 8. Increased transit use would add to the demands on the regional and local transit systems, particularly Muni.

- The deficit may be less as the survey did not inventory parking in the Civic Center area, the areas west of Eighth St., south of Bryant St. or north of Washington St. The survey did indicate that inside the study area about 6,000 parking spaces have been added since 1967 and approximately 1,400 are proposed to be added (exclusive of any parking to be provided in Yerba Buena Center).
- Current City policy, as stated in the Revisions to the Transportation Element of the Master Plan Regarding Parking, is to "Discourage the addition of new long-term parking spaces in and around downtown, limit the amount of new spaces to that which cannot reasonably be accommodated by transit and locate long-term parking facilities in areas peripheral to the downtown commercial district."/9/
- The Master Plan Parking Policy has also stated the need to "encourage short-term use of existing parking facilities within and adjacent to the downtown core by converting all-day commuter parking to short-term parking in areas of high demand or to car/van pool parking where short-term parking demands are low."/9/ Accordingly, approximately 14,000 existing off-street spaces in the C-3-0 planning district could be converted to short-term-only

parking if the City enacted legislation to establish public control over private garages.

- Imbalances in long-term parking demand and potential supply, given projected cumulative development and demand, would be expected to encourage the use of car pools and van pools, or the creation of satellite (intercept) parking facilities in outlying non-residential areas, with shuttle or expanded Muni service to the downtown area, or increased use of transit directly for commuters from San Francisco or from suburban centers (East Bay, North Bay, Peninsula). Peninsula residents, for example, could find Southern Pacific commuter trains more attractive if they could get no closer to downtown by car than the train terminal at Fourth and Townsend Sts. All transit options would add to the demand on the regional and local transit systems, however, particularly Muni.

TRUCKS AND SERVICE VEHICLES

- Truck and service-vehicle loading for existing uses on the site is conducted at an enclosed dock on Pine St., and at curbside on both Pine and Front Sts. The proposed building would have a loading dock at street level on Front St. with two stalls, each 10 ft. wide; one stall would be 35 ft. deep and the other would be 25 ft. deep. The off-street loading plan would be consistent with the requirements of Section 154 (b) of the City Planning Code. While the number of loading spaces would conform to the requirements of City Planning Commission Resolution No. 9286, the proposed dimensions would not meet the new loading dock requirements of 35 ft. deep and of 12 ft. wide for each stall. /10/ Some unloading would occur at the curb on Front and Pine Sts. in the existing loading zones there, particularly for deliveries to the ground floor retail space, which would not have access from the loading dock.

There would be about 60 truck and service vehicles stopping per day, or about seven per hour. With a typical loading period of about 25 minutes, there would be an average hourly demand for three loading spaces. Some loading, therefore, would occur at curbside; there is no provision in the building's design for a dolly ramp between the loading zones and the sidewalk.

During peak hours about 90 pedestrians per minute would pass the site on the Front St. sidewalk. Conflicts would occur between these pedestrians and trucks in docking maneuvers, and would result in momentary delays for both. Most single-unit trucks could be docked in the 35-ft.-deep stall without extending beyond the property line and affecting the sidewalk, as could many such trucks in the 25 ft. deep stall. Very large single-unit trucks would block a few feet (less than 5 ft.) of the sidewalk, and tractor-trailer rigs would block the entire sidewalk if docked. This would occur rarely, as with moving vans.

● NOTES - Transportation

/1/ Trip generation rates by floor area, for various uses, have been compiled by the Department of City Planning in Guidelines for Environmental Evaluation-Transportation Impacts, October 1980. Additional trip generation rates are contained in Caltrans, Trip Ends Generation Research Counts, Volumes 1-11, 1971-77. Office space, retail space, and residential space are estimated to generate, respectively, 17.5, 55 and 7 daily persons trips per 1,000 rentable square feet. Twenty percent of daily office trips, 10 percent of daily retail trips and 10 percent of daily residential trips are assumed to occur during the p.m. peak hour.

/2/ OER recommends use of these modal splits in the Guidelines for Environmental Evaluation-Transportation Impacts, October 1980, when a building-specific determination has not been made.

/3/ The Department of City Planning, Office of Environmental Review (OER), has issued a memorandum, dated July 2, 1982, dealing with the subject of the differences in the land-use and employment trend approaches, and recommending that both approaches be used in future EIRs to give a more balanced assessment of future peak transportation demand. This memorandum is on file with and available from the Office of Environmental Review, 450 McAllister St., 5th Floor. The memorandum calls out some of the fundamental differences between the two approaches and also details the limitations of each approach.

/4/ The 39 affected Muni lines are 1, 1X, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 14, 14GL, 14X, 15, 17X, 21, 27, 30, 30X, 31, 31X, 32, 38, 38L, 38AX, 38BX, 41, 42, 45, 66L, 71, 80X, J, K, L, M and N.

/5/ BART projections from Marty Birkenthal of BART on August 18, 1982; SamTrans projections from Gregory Kipp of SamTrans on August 18, 1982; A-C Transit proposals from Ted Reynolds of AC Transit on August 18, 1982; Golden Gate Transit proposals from Alan Zahradnik of Golden Gate Transit on August 19, 1982, Southern Pacific proposal from Jim Strong, Design Engineer on August 26, 1982.

IV. Environmental Impacts

/6/ See Appendix D, Table D-11: Pedestrian Flow Regimen, for a description of pedestrian capacities.

/7/ Wilbur Smith and Associates, Center City Circulation and Goods Movement Study, prepared for the San Francisco Transportation Policy Group, September 1980.

/8/ Inventory of Off-Street Parking Spaces, San Francisco Department of City Planning, May 24, 1982.

/9/ Revisions to the Transportation Elements of the Master Plan Regarding Parking, Resolution 7647, San Francisco Planning Commission, January 20, 1977.

/10/ City Planning Commission Resolution 9286, Exhibit A, "Off-Street Freight Loading and Service Vehicle Space Requirement and Guidelines," adopted January 21, 1982.

E. AIR QUALITY

LOCAL EFFECTS

- Cumulative and project effects on sidewalk carbon monoxide (CO) levels at Pine and Market Sts. were calculated for 1987 using peak-hour traffic volumes according to methods recommended by the Bay Area Air Quality Mangement District (BAAQMD); results are shown in Table 9, p. 101. Project-generated traffic would contribute no more than 0.1 parts per million (ppm) to the eight-hour and one-hour CO concentrations in the project vicinity and would cause no violations of standards.
- As indicated in Table 9, no violations of standards would be expected to occur in 1987. Concentrations in 1987 would be less than in 1982 because Federal and State mandated increased auto-emissions control measures during this period would more than offset increased traffic volume.

● TABLE 9: PROJECTED WORST-CASE CUMULATIVE SIDEWALK CARBON MONOXIDE CONCENTRATION IMPACTS AT STREETS NEAR THE PROJECT*

	Existing 1982	Cumulative Development Without Project 1987	Cumulative Development + Project 1987
(in parts per million)			
<u>1-Hr. Concentration</u> (1-hr. standard = 35 ppm)			
Ambient level	10.3	8.4	8.4
Market Street	15.7	12.5	12.6
Pine Street	12.5	10.0	10.0
<u>8-Hr. Concentration</u> (8-hr. standard = 9 ppm)			
Ambient level	6.5	5.2	5.2
Market Street	7.5	5.9	5.9
Pine Street	6.9	5.5	5.5

*Concentrations at the sidewalk adjacent to the most-heavily traveled roadway segment were calculated according to the BAAQMD Guidelines for Air Quality Impact Analysis of Projects, 1975, updated with 1981 ARB EMFAC6 emission factors; worst-case meteorology and roadway configuration are assumed. The ambient or background level in 1982 was calculated as the three-year average of the second highest annual concentrations. The background level was adjusted to 1987 according to the regional emission projected for that year by the 1982 Bay Area Air Quality Plan. The year 1987 was used because the most recent BAAQMD projections and data are for 1987. Most downtown developments in the cumulative list, including the project, are expected to be completed during the 1982-87 period.

SOURCE: Environmental Science Associates, Inc.

The California standard for airborne lead particles is a monthly average of 1.5 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) and the federal standard is a quarterly average of 1.5 $\mu\text{g}/\text{m}^3$. The federal standard has not been violated and the state standard has been violated twice since 1978 in San Francisco. In 1980, the highest mean monthly concentration of lead in San Francisco was 0.90 $\mu\text{g}/\text{m}^3$./1/

The major source of atmospheric lead is gasoline used in motor vehicles. Although traffic generated by the project would increase exhaust emissions in

IV. Environmental Impacts

proportion to vehicle miles traveled, overall ambient lead concentrations are expected to decrease in the future as the use of unleaded gasoline increases.

REGIONAL

Project-related emissions would arise from vehicle trips, building operations and space and water heating. Transportation sources would account for over 95 percent of the project-related CO emissions.

- Project-related emissions would result in an increase of less than 0.01 percent over existing emissions in the San Francisco Bay Area Air Basin. Table 10 shows annual project-related emissions, emissions related to cumulative development, and regional emission levels of hydrocarbons and nitrogen oxides, which are precursors of ozone, in 1987. Neither the project nor other development in the vicinity would conflict directly with the control strategies of the Bay Area Air Quality Plan.

● TABLE 10: 1987 ANNUAL POLLUTANT EMISSIONS (tons per year)

<u>Pollutant</u>	<u>Project</u>	<u>Cumulative Development (including project)</u>	<u>Regional</u>
Carbon Monoxide	23.4	4,127	854,000
Hydrocarbons	2.1	364	188,000
Nitrogen Dioxide	3.0	534	198,000

SOURCE: Environmental Science Associates, Inc.

NOTE - Air Quality

/1/ 1978, 1979 and 1980 California Air Quality Data Summaries, California Air Resources Board.

F. CONSTRUCTION NOISE

Project construction would occur in three stages: demolition, excavation and

construction of the new building. Throughout the 20-month construction period, trucks would be visiting the site, initially hauling away dirt and debris and then bringing materials. These activities would temporarily increase noise levels in the surrounding area.

During construction all powered equipment, with the exception of impact tools, would have to comply with the San Francisco Noise Ordinance requirement of a sound level not more than 80 dBA at 100 feet. The ordinance prohibits construction work from 8 p.m. to 7 a.m., if noise emissions from such work exceed the ambient noise level by 5 dBA at the property line, unless a special permit is authorized by the San Francisco Department of Public Works. During construction, many types of equipment are used. Typical demolition and construction noise levels anticipated for this project are shown in Table 11.

TABLE 11: TYPICAL OFFICE BUILDING CONSTRUCTION NOISE LEVELS AT 50 FEET.

<u>Construction Phase</u>	<u>Average Noise Level</u>
Ground Clearing	84 dBA
Excavation	89
Foundation	78
Erection	87
Finishing	89

SOURCE: D.N. May, Ph. D., 1978, Handbook of Noise Assessment, Van Nostrand Reinhold Environmental Engineering Series, p. 211.

During the 12 weeks of demolition and excavation and 32 weeks of exterior finishing, noise levels in the lower floors of the 101 California St. base building, the 444 Market St., 111 Pine St., and Pacific Gas and Electric (PG&E) buildings would be expected to rise as high as 65 dBA. Ambient noise at this level would require raised voices to communicate at distances greater than six ft., and would be distracting to workers in these buildings.

Project construction would require about four weeks of foundation piledriving. Conventional unmuffled and unshielded pile drivers emit noise

levels of 105 dBA at a distance of 50 ft. each time the driver strikes the pile. The quietest impact piledriver measured by the City generates noise levels of 90 dBA at 50 ft., but is not always compatible with construction requirements. The Department of Public Works requires "state of the art" noise control devices during construction. All building construction, however, exceeds the Noise Ordinance standard of 80 dBA at 100 ft. during piledriving.

The lowest dBA level achieved during piledriving is in the high 80's at a distance of about 100 ft. Actual noise emissions are dependent upon soil characteristics and the type of piles used. The Department of Public Works analyzes the impacts of piledriving for every building and frequently requires staggered hours for piledriving. The most frequent requirement in commercial areas is to limit piledriving from 1 p.m. to 9 p.m. All noise control measures imposed by the Department are negotiable and are subject to revision during construction should circumstances require new action./1/

Assuming noise emissions of 105 dBA at 50 ft., piledriving would be audible to people on streets within 1,000 ft. of the project site where not shielded by intervening buildings. Noise levels would reach as high as 75 dBA in the lower floors of the 101 California base building, the 444 Market St., 111 Pine St. and the PG&E buildings. Intermittent noise intrusions from piledriving would require raised voices at two ft., and shouting at 12 ft., in order to communicate. Repeated intermittent sounds of a high noise level appear to be more likely to disrupt performance than continuous or steady sounds of a comparable level./2/

Physiological responses suggestive of a general stress reaction have been shown to occur at noise levels far below those which result in hearing damage./3/ Observations in humans have shown that responses to brief sounds over about 70 dBA include general constriction in the peripheral blood vessels, reduction of peripheral blood flow, and changes in heart rate, breathing patterns, gastro-intestinal secretions, and the size of pupils./4/ General psychological distress produced by noise can contribute to other stress and in this way contribute to the incidence of nonauditory disease./4/ Permanent nonauditory effects of temporary exposure to high noise levels have not been well documented. The effects described above would likely occur for

the period of noise exposure. It has been shown, in monkeys, that exposure to typical industrial noise levels for a period of nine months results in pronounced (greater than 20 percent) and lasting blood pressure increases./5/ Despite some inconsistencies in the studies, environmental noise has been associated with increased incidence of cardiovascular disease./3/ Intermittant noise, such as that produced by piledriving, may reduce an individual's perception of control of the environment frequently resulting in depressed moods and motivation./3/ In general, disease tends to be more prevalent among persons exposed to unpredictable or intermittent sound, in comparison to periodic or continuous noise./3/

NOTES - Noise

/1/ Ray McDonald, Chief Building Inspector, Bureau of Building Inspection, Department of Public Works, July 6, 1981, telephone communication.

/2/ U.S., Department of Health, Education and Welfare, Health Services and Mental Health Administration, Occupational Exposure to Noise, 1972.

/3/ Sheldon, Cohen, et. al., "Cardiovascular and Behavioral Effects of Community Noise, "American Scientist, Volume 69, September-October 1981.

/4/ Central Institute for the Deaf, Effects of Noise on People, for the U.S. Environmental Protection Agency, 1971.

/5/ Peterson, E.A., et. al., "Noise Raises Blood Pressure without Impairing Auditory Sensitivity," Science Volume 211, March 27, 1981.

G. ENERGY

During the construction period, an estimated energy consumption of about 526 billion (Btu) at-source would be required./1/ This value is equivalent to about 89,000 barrels of oil (bbl/oil) and includes the energy required for fabrication and distribution of materials, as well as direct energy consumption. Direct energy consumption at the site would represent approximately 18 percent of total construction energy consumption. An estimated 92 billion Btu at-source (16,000 bbl/oil equivalents) would be consumed for site excavation, transportation of materials and building construction, including on-site gasoline and electrical consumption.

IV. Environmental Impacts

A state computer program has not yet been carried out to determine precise energy consumption characteristics for the project. Based on results of a State-approved energy analysis program, for a project of similar location, size and design, it has been estimated that the proposed building would consume approximately 111,900 Btu at-source per sq. ft. per year./1a/ This value is about 10 percent lower than the State standard of 126,000 Btu at-source per sq. ft. per year./2/ A state computer program would be carried out for the project to show compliance with Title 24 of the California Administrative Code, prior to issuance of a building permit.

The ventilation system would be a variable-air-volume air-conditioning system providing individual zone control and would use outside-air/return-air damper economizer controls to permit the use of 100 percent outside air for cooling when the outside air was of a desirable temperature. This would reduce the air-conditioning requirements of the structure. Heating would be provided by a natural-gas-fired boiler and a fuel-oil backup. The air-conditioning system would be a central centrifugal water chilling system. The project design would also include a computer-based building automation system including temperature controls and energy monitoring functions. Projected energy consumption is shown in Table 12.

The project would have a connected kilowatt load of about 7,025 kilowatts. The office portion of the building would require about 299,000 kilowatt hours (KWH) per month, the equivalent of about 527 barrels of oil, and 3.6 million KWH or 6,250 barrels of oil equivalents per year. This represents an electrical demand of about 1.06 KWH per sq. ft. per month as compared to an estimated average electrical demand of 1.55 KWH per sq. ft. per month for other typical high-rise office buildings recently proposed in San Francisco. Peak at-source electrical demand for the offices would be about 1660 KWH or 17.0 million Btu at-source (2.9 barrel of oil equivalents.) This peak would occur at 12:00 noon on August afternoons and would not coincide with the PG&E system-wide (northern California service area) peak demand period which occurs late on August afternoons. Estimated average daily and annual electrical distribution curves are shown in Figures 24 and 25, p.109 - 110.

TABLE 12: ESTIMATED ANNUAL PROJECT ENERGY CONSUMPTION

<u>OFFICE</u>	<u>Units of Energy (in Thousands)</u>	<u>At-Source Resource Use (billions of Btu)*</u>	<u>Barrel Oil Equiv. (BBL. Oil)</u>
Electricity	3,600 KWH	36.9	6,270
Natural Gas	2,150 cu. ft.	2.4	400
<u>CONDOMINIUMS</u>			
Electricity	2,110 KWH	21.6	3,680
Natural Gas	740 cu. ft.	1.8	140
<u>TRANSPORTATION**</u>			
Gasoline	120 gallons	16.8	2,850
TOTAL PROJECT	-	78.5	13,340

*1 KWH = 10,239 at-source Btu

1 cubic foot = 1,100 at-source Btu

1 gallon = 140,000 at-source Btu

1 BBL. Oil = 5.88 million at source Btu.

**for vehicular trips generated by the project

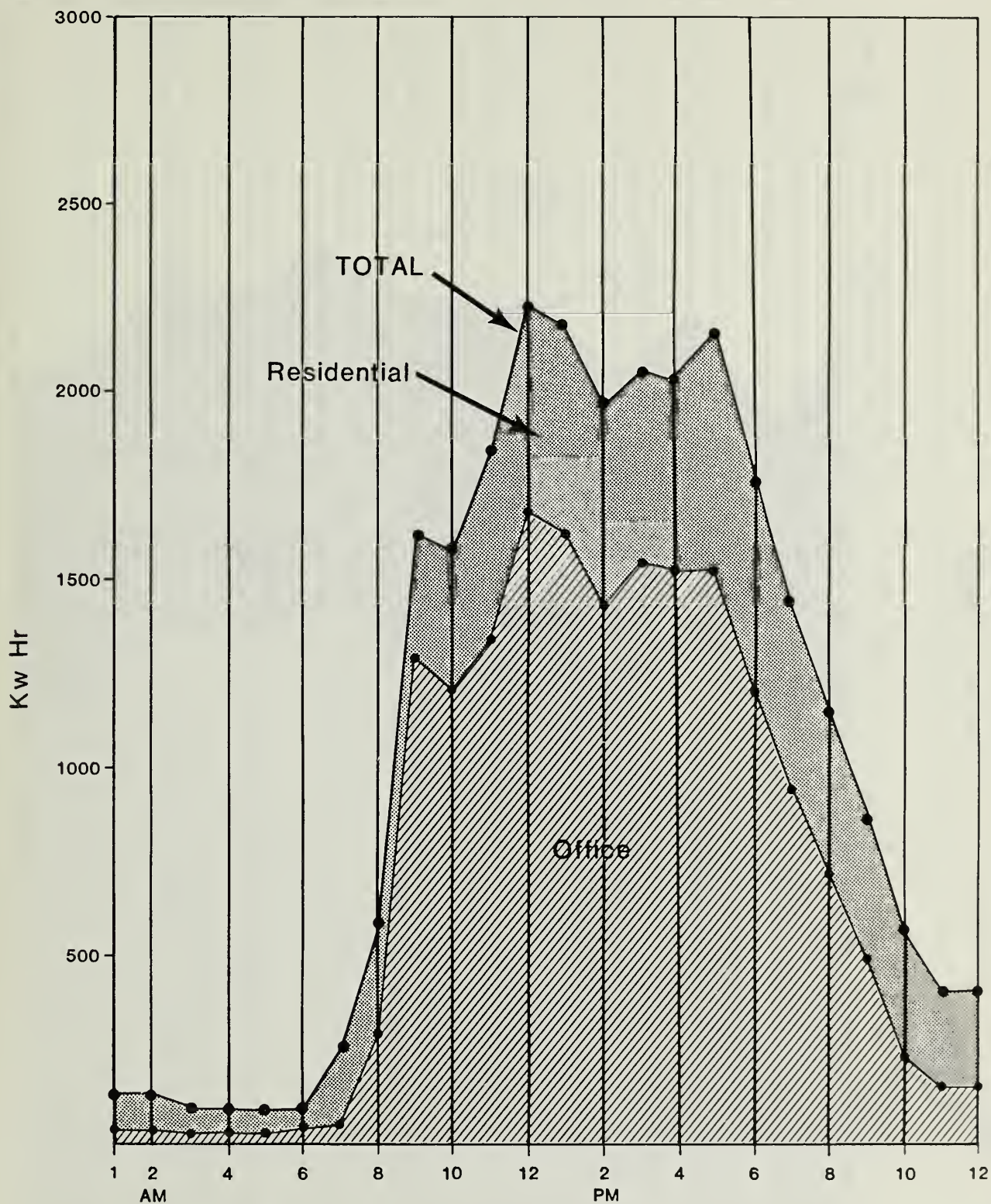
SOURCE: Environmental Science Associates, Inc. and Skidmore, Owings & Merrill

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The condominiums would require 176,000 KWH per month (the equivalent of 306 barrels of oil), or an electrical demand of about 2.02 KWH per sq. ft. per month. Peak at-source electrical demand would be 620 KWH, equivalent to 6.4 million at-source Btu, or 1.1 barrels of oil. This would occur at 5 p.m. on August evenings and would coincide with the PG&E system-wide peak.

The project would require a total of about 240,000 cubic ft. of natural gas per month, 179,000 for offices and 61,000 for the condominiums. This represents a consumption of about 0.7 cubic ft. per sq. ft. per month for the office portion as compared to a projected average of 2.2 cubic ft. per sq. ft. per month for recently proposed high-rise buildings in San Francisco. Peak demand for natural gas for the office portion of the building would be about 3,300 cubic ft. per hour, equivalent to 0.6 barrels of oil, and would occur at 9:00 a.m. on weekday mornings in December. This would not coincide with the PG&E (northern California service area) system-wide peak period for natural gas which occurs in the early evening hours in January. Estimated annual and average daily natural gas distribution curves for the project are shown in Figures 26 and 27, pp. 111 - 112.

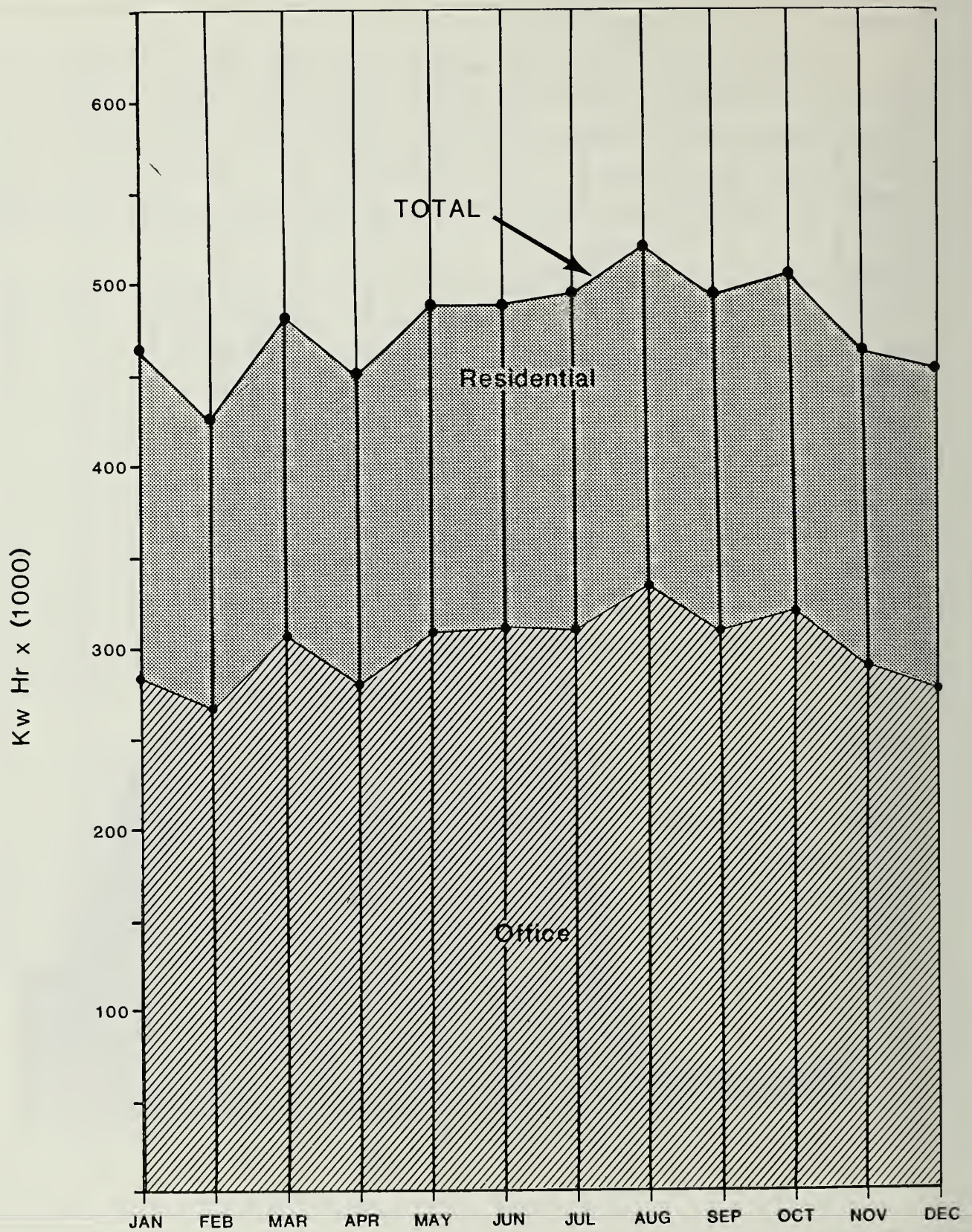
The condominiums would consume an estimated 61,000 cubic ft. (67 billion Btu) of natural gas per month. This represents consumption of about 0.7 cubic ft. per sq. ft. per month of natural gas. Peak demand for natural gas would be about 1,120 cubic ft. per hour and would occur at 9:00 a.m. on December mornings; this would not coincide with the PG&E evening January peak period.



NOTE: Residential Values Are
Total Minus Office

SOURCE: Environmental Science Associates, Inc.
and Skidmore, Owings, & Merrill

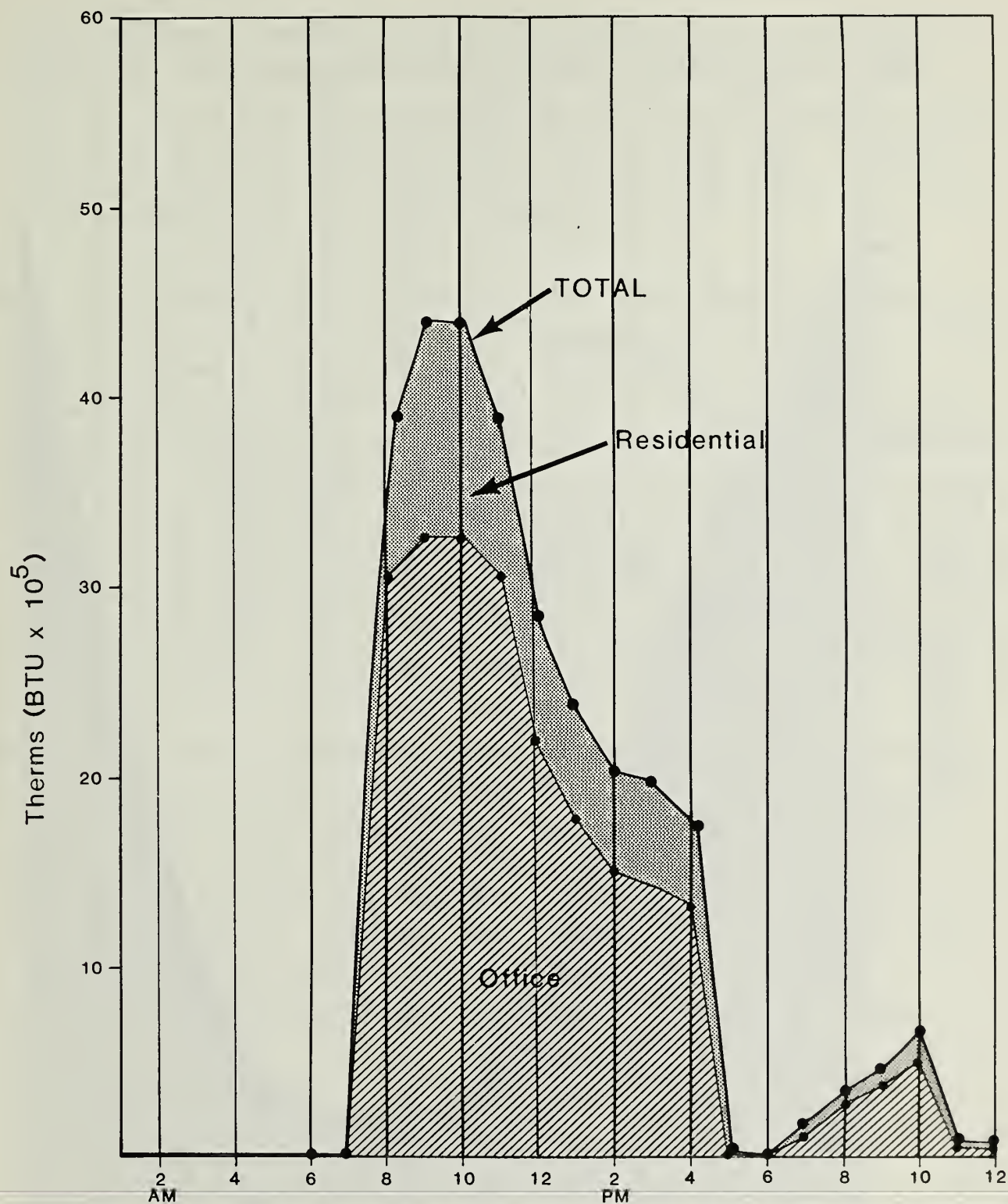
FIGURE 24: Estimated Average
Daily Electrical Load
Distribution Curves



NOTE: Residential Values Are
Total Minus Office

SOURCE: Environmental Science Associates, Inc.
and Skidmore, Owings, & Merrill

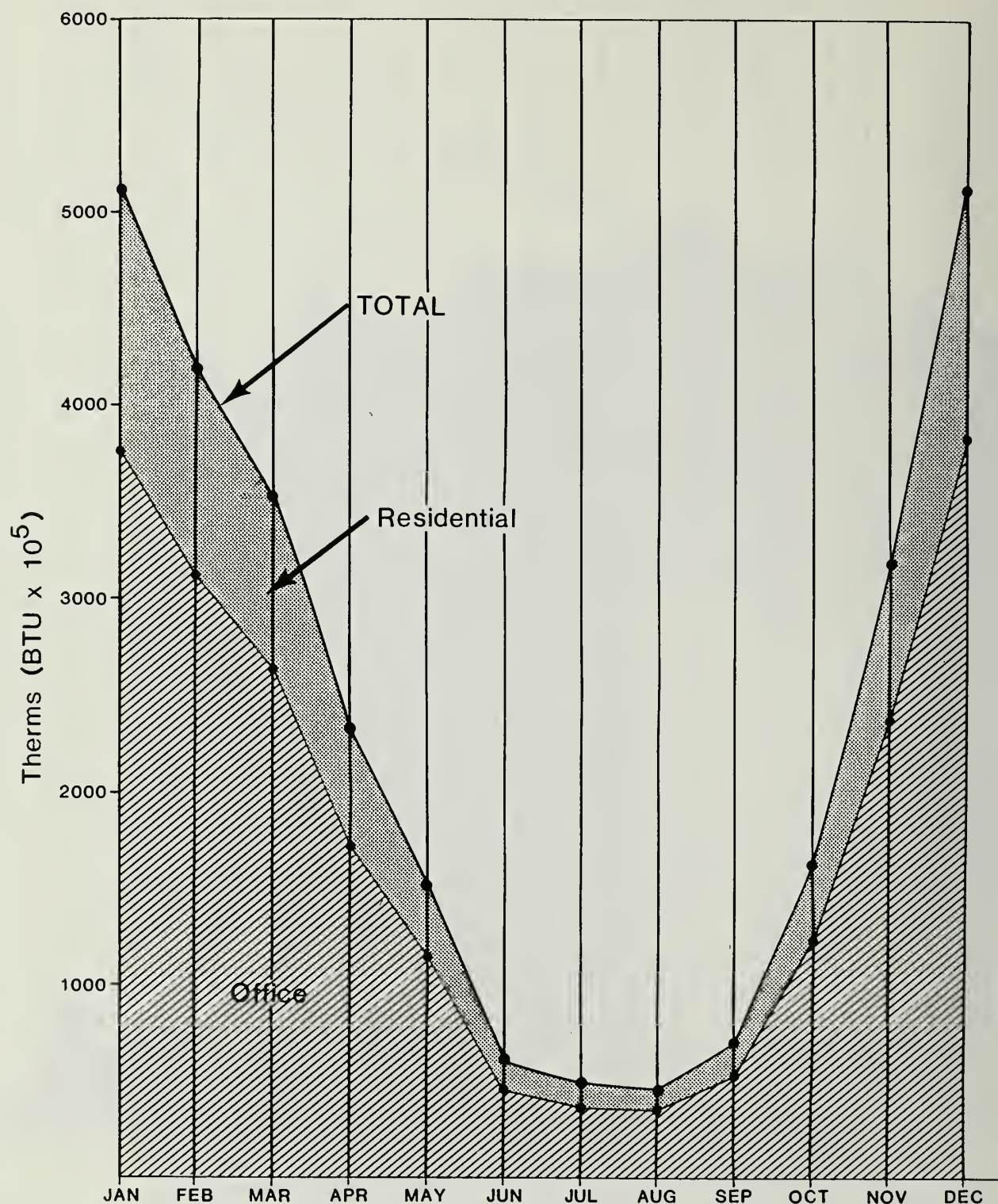
FIGURE 25: Estimated Annual
Electrical Load
Distribution Curves



NOTE: Residential Values Are
Total Minus Office

FIGURE 26: Estimated Daily Natural
Gas Distribution Curves

SOURCE: Environmental Science Associates, Inc.
and Skidmore, Owings, & Merrill



NOTE: Residential Values Are
Total Minus Office

FIGURE 27: Estimated Annual Natural
Gas Distribution Curves

SOURCE: Environmental Science Associates, Inc.
and Skidmore, Owings, & Merrill

The projected net increase in vehicle fuel use for the traffic generated by the project would total about 120,000 gallons of gasoline per year (about 16.8 billion Btu at-source, or 2,850 barrels of oil). This projected use is based upon the mix of vehicles expected in California in 1985. In general, statewide vehicle fuel use is expected to decrease until 1995 as the vehicle fleet becomes more efficient, and fuel more expensive.

- The project and other office development under review, approved, or under construction in downtown San Francisco (see Appendix D, Table D-6, pp. 313-315 of this document, for a list of projects) would increase electricity consumption by about 260 million kilowatt-hours per year and would increase natural gas consumption by about 403 million cubic feet per year for building operations. Transportation associated with this cumulative office development would increase diesel fuel consumption by about 1.3 million gallons per year, would increase gasoline consumption by about 8.8 million gallons per year, and would increase electricity consumption by about 52 million kilowatt-hours per year (see Table 12a). The total increase in energy demand would be about five trillion Btu annually, equivalent to about 880,000 barrels of oil per year.
- Cumulative office development under review, approved, and under construction in downtown San Francisco, which is included in PG&E's projections/^{3/}, would increase PG&E's current systemwide electrical load of 79,579 billion watt-hours per year by about 0.3%. PG&E is planning for an 11% increase in this load by 1990; this is an average increase of about 1.2% per year.^{4/} Additionally, PG&E is projecting reserve margins (excess capacity) of 20 to 30 percent over the next ten years.^{4/} Thus, the cumulative office development would not alter PG&E's short-range plans.

● TABLE 12a: ESTIMATED ANNUAL CUMULATIVE ENERGY CONSUMPTION

	Units of Energy (in Millions)	At-Source Resource Use (Billions of BTU)*	Barrel Oil Equiv. BBL. OIL (in Thousands)
<u>Commercial Buildings</u>			
Electricity	260 KWH	2,660	450
Natural Gas	403 cu. ft.	443	75
<u>Transportation</u>			
Diesel	1.3 gal.	210	35
Gasoline**	8.8 gal.	1,200	210
Electricity	52 KWH	<u>532</u>	<u>90</u>
	TOTAL	5,045	860

*1 KWH = 10,239 at-source BTU

1 cubic foot = 1,100 at-source BTU

1 gallon = 140,000 at-source BTU

1 BBL. Oil = 5.88 million at source BTU.

**for vehicular trips generated by the project

SOURCE: Environmental Science Associates, Inc.

NOTES - Energy

/1/ Btu, British thermal unit, is a standard unit for measuring heat. Technically, it is the quantity of heat required to raise the temperature of one pound of water 1 degree Fahrenheit (251.98 calories) at sea level. The term 'at-source' means that adjustments have been made in the calculation of the Btu energy equivalent to account for losses in energy which occur during generation and transmission of the various forms of energy as specified in: ERCDC, 1977, Energy Conservation Design Manual for New Nonresidential Buildings, Energy Resources Conservation and Development Commission, Sacramento, CA; and Apostolos, J.A., W.R. Shoemaker, and E.C. Shirley, 1978, Energy and Transportation, Sacramento, CA. (Project 20-7, Task 8).

- /1a/ The project was compared with 333 California St., a mixed-use commercial/residential building on which the project engineers also worked. The trace run for the 333 California St. project was carried out on August 11, 1981.

/2/ California Energy Commission, July 26, 1978, Regulations Establishing Energy Conservation Standards for New Residential and new Nonresidential Buildings, Title 24 of the California Administrative Code.

/3/ Jim Davidson, Senior Civil Engineer, Generation Planning, Pacific Gas and Electric Company; telephone communication, May 21, 1982.

/4/ Pacific Gas and Electric Company, March, 1982, Forecast of the Demand for Electricity Within the PG&E Service Area, 1982-2002.

H. GEOLOGY, SEISMOLOGY, AND HYDROLOGY

GEOLOGY

Demolition of existing buildings would take about two months; about 84,000 cubic yards of material would be removed./1/ The entire site would be excavated to a depth of about 26 ft.; about 15,000 cubic yards of material would be removed from the site over a period of about one month. Excavated material would probably consist of fill and Bay Mud, and would most likely be transported via Davis St. and U.S. 101 to a disposal site near the San Francisco Airport or Redwood Shores. Spilled dirt from haul trucks could present a safety hazard to motorists and pedestrians, cause siltation in storm drains and be a source of dust.

Geologic hazards on the site during excavation and construction could be caused by the exposure of pit walls without proper shoring. Loosely consolidated materials, in particular Bay Mud, may lose strength and be literally squeezed into the pit due to pressure from overlying materials. In compliance with the Excavation Standards of the California Occupational Safety and Health Agency, the contractor would shore up and protect pit walls from lateral movement of soils into the pit. This would minimize the hazard to construction workers and surrounding streets or buildings and possible damage to construction on the site.

The project would be supported on piles driven down to stable materials. A pile foundation would effectively reduce the hazards on the site in terms of weak soils and subsidence, although some minor but allowable settlement may occur.

SEISMOLOGY

Groundshaking would be the major seismic hazard for the project during an earthquake. The project would incorporate a moment-resisting steel frame in its construction, thus minimizing the possibility of the building's collapse during an earthquake, although major structural damage may result./2/ The buildings would be designed to meet the seismic standards of the San Francisco Building Code. The Code contains specific requirements for materials, welding and bolting to ensure that a building would not collapse under earthquake-induced motions. Loosely attached or unattached elements within the building, such as bookcases and light fixtures, could topple and glass windows may break and fall to the street. The building facade would be composed of granite panels and glass; the granite would be bonded to pre-cast concrete panels on the exterior of the tower. Steel brackets, cast into the concrete panels, would be welded or bolted to the steel building frame to minimize the possibility of panels falling during an earthquake.

The use of a pile foundation and the removal of the fill below the site would minimize the effects of liquefaction and subsidence on the project. However, liquefaction could occur under adjacent streets during a major earthquake,

causing pipes and utility lines to bend or break and street surfaces to buckle or crack. Thus, services to the project, such as water and electricity, could be cut off. For this reason, the San Francisco Building Code requires that an emergency water supply and power generator be incorporated into the building design.

HYDROLOGY

Dewatering would be required during excavation and construction for an estimated period of about five months. The rate of flow is projected to be about 100 gallons per minute and would probably involve about 15 million gallons of groundwater./3/

All water from dewatering operations would be discharged into the existing storm drain system. Dewatering may produce local subsidence in compressible geologic materials such as artificial fill and Bay Mud, causing damage to surrounding streets, older buildings, and utility lines. The Department of Public Works requires that a surety bond be posted before issuance of permission for excavation. The construction contractor would be held responsible for any damage that might result from dewatering. Dewatering operations would probably not have any permanent impact on the groundwater table; groundwater conditions would probably return to normal following the cessation of dewatering.

Because the project would extend below the groundwater table, seepage may occur in the lower parking level. Groundwater could also damage basement walls by infiltration into the walls or by hydrostatic pressure. The project would have no impact on runoff from the site.

NOTES - Geology, Seismology, Hydrology

/1/ Estimates of the duration and amount of material involved in demolition and excavation are rough approximations. Final estimates, to be developed by the project architect prior to construction, may vary substantially from the figures shown. The depth of excavation was assumed to extend to the bottom of the structure (i.e. the bottom of the lowest basement slab as shown on the project plans), and may extend a few feet lower.

/2/ A moment-resisting frame is a type of steel construction that emphasizes the strength of the connection between vertical columns and horizontal beams. This type of frame has been designed to resist the lateral pressures induced by wind or earthquakes that tend to cause frame collapse.

/3/ Estimates of the duration and extent of dewatering are preliminary and approximate. Estimates were made based on geotechnical studies conducted for the adjacent 101 California St. Building. More precise information will be developed upon completion of a foundation investigation for the project.

1. GROWTH INDUCEMENT

The project would add about 62,000 gross sq. ft. of commercial space and about 85,900 gross sq. ft. (57 units) of residential space to the Financial District. Employment at the site would increase by about 380, from about 600 to about 980. Occupants are not presently known, but would probably include tenants expanding or relocating from other San Francisco locations, tenants relocating from outside San Francisco, and firms new to the Bay Area. Therefore, the increase in employment at the project site would not necessarily represent employment that is new to San Francisco. If the building were fully leased and the office space provided by the project did not create permanent vacancies in other San Francisco office buildings, total employment in San Francisco would eventually increase directly by about 380 jobs due to the project. Approximately 450 additional jobs would be indirectly supported in San Francisco through the multiplier effect (see Section IV., Employment, Housing, and Fiscal Factors, p. 75).

This overall growth would be in response to the increasing demand for office space in San Francisco's Financial District. This demand would exist whether or not the proposed project were built. The demand for office space continues the trend of growth in service sector and headquarters office activities and employment in San Francisco. The increases in downtown office space and employment would contribute in turn, to continued growth of local and regional markets for goods, services and housing.

It is expected that some downtown workers would desire to live in San Francisco. Employment growth, however, may not directly correspond to increases in demand for housing and City services to residents, as some new

jobs would be held by individuals who already live in the City but who previously either did not work or worked outside the City, or by those who prefer to live in surrounding communities, or by those who would not be able to afford or to locate housing in the City.

Any net increase in employment downtown would increase the demand for retail goods and services in the area. By increasing office employment, the project would intensify the demand for retail goods and services. Some of this demand would be met by the proposed retail space on the ground floor and second floor of the project.

Increases in employment downtown would also increase demand for business services, to the extent that the expanded space would not be occupied by firms providing those services. In response, demand would increase for existing space and possibly for further new development.

The proposed provision of about 57 condominium apartments in the project could generate a demand for some resident-serving retail services. To the extent that they are not located within the project, new facilities could be induced to locate nearby. The placement of residential units in this location could tend to encourage other new developments in the Financial District to include housing, and could result in greater 24-hour activity in the Downtown.

V. MITIGATION MEASURES PROPOSED TO MINIMIZE THE POTENTIAL
IMPACTS OF THE PROJECT

In the course of project planning and design, measures have been identified that would reduce or eliminate potential environmental impacts of the proposed project. Some of these measures have been or would be adopted by the project sponsor or project architects and contractors, some are under consideration by the project sponsor, some may be implemented by public agencies, and the remainder have been rejected by the sponsor. The City Planning Commission could require that some or all of these measures be included as conditions of project approval, if found to be warranted.

Each mitigation measure and its status are discussed below. Where a measure has been rejected, the reasons for its rejection are discussed.

A. URBAN DESIGN

MEASURE PROPOSED AS PART OF THE PROJECT

1. The project would incorporate pedestrian amenities, including street trees, two levels of retail use and landscaping in the public gallery and at the building entrances.

B. EMPLOYMENT, HOUSING AND FISCAL FACTORS

MEASURES PROPOSED AS PART OF THE PROJECT

2. The project proposes to provide approximately 57 residential condominium units on-site. The size of these units would vary to provide for a diverse market sector. Project housing would partially offset estimated increase in demand on the City's housing supply of 84 units that would be generated by the net increase in office employment at the project site. The

project sponsor would mitigate the remainder of the housing impact through off-site housing development or contributing to the City's low- and moderate-income mortgage investment pool.

3. The project sponsor would negotiate, with existing tenants having leases that would be prematurely terminated by the project, to provide financial assistance for relocation activities.

C. TRANSPORTATION

MEASURES PROPOSED AS PART OF THE PROJECT

4. During the construction period, construction truck movement would be limited to the hours between 9 A.M. and 4 P.M. to minimize peak-hour traffic conflicts. The project sponsor and construction contractor would meet with the Traffic Engineering Division of the Bureau of Engineering to determine feasible traffic mitigation measures to reduce traffic congestion during construction.

5. To minimize cumulative traffic impacts due to lane closures and street excavation during construction, the project sponsor would coordinate with construction contractors for any concurrent nearby projects that are planned for construction, or later become known.

6. The project sponsor would require, by contract, that the general contractor provide off-street parking for construction workers on the project site or at an off-site location, to minimize demand for on-street parking by construction workers.

7. The project sponsor proposes to provide long term parking in excess of the required ratio of one space for every four dwelling units for building residents to alleviate the residential parking demand generated by the project. About 37 parking spaces are proposed to be allocated for residents of the 57 proposed condominiums. Approximately 10 spaces would be used for short-term parking for visitors to the office building.

V. Mitigation

8. Upon project completion the project sponsor would encourage tenant firms to implement a flexible time ("flex-time") system for employee working hours (flex-time is designed to reduce peaks of congestion in the transportation system).

9. To reduce pedestrian congestion on sidewalks surrounding the site, the project includes multiple building entrances, widened sidewalks and a direct connection to the Market St. Subway. Access from the lower basement level of the project to the Embarcadero Station of the Market St. subway would encourage the use of Muni and BART and reduce traffic congestion in the Downtown. Prior to completion of final design drawings, the project architects would coordinate with BART and Muni staff for a direct connection between the proposed building and the Embarcadero Station.

10. To mitigate traffic congestion by the project, a transportation broker would be sought to encourage transit use through the sale on-site of BART and Muni passes, and to encourage employee car pool and van pool systems in cooperation with RIDES for Bay Area Commuters by providing a central clearinghouse for car and van pool information.

11. The project sponsor would support whatever legal means if finally adopted by the Board of Supervisors to contribute funds to an established Downtown transit assessment district to mitigate peak-hour transit congestion caused by cumulative office development in the Downtown area.

12. Within a year of full occupancy of the project, the project sponsor would conduct a survey, in accordance with methodology approved by the Department of City Planning, to assess actual trip generation patterns of project occupants and actual pick-up and drop-off areas for car pools and van pools. The project sponsor would make this survey available to the Department. Alternatively, at the request of the Department, the sponsor would provide a fair and equitable in-lieu contribution toward an overall transportation survey for the downtown area to be conducted by the City.

13. As a safety mitigation, the parking garage entrance has been designed so that drivers and pedestrians would have an unobstructed view of the intersection of the sidewalk and garage entrance.

14. The project sponsor would provide secure bicycle parking facilities to encourage the use of bicycles by employees and messengers. Handicapped parking and handicapped access facilities would be provided in the proposed parking garage.

15. Building directories and visual aids indicating the location of the freight elevators would be placed in the loading area of the building. This measure would be consistent with recommendations contained in the Department of City Planning document Guiding Downtown Development.

16. The building would have "eyebolt" fixtures suitable for suspending Muni trolley wires on the frontages of Market and Front Sts., in accordance with the recommendations of the Muni planning department.

MEASURES THAT COULD BE IMPLEMENTED BY PUBLIC AGENCIES

17. Pacific Gas and Electric Company could coordinate work schedules with other utilities requiring trenching, so that street disruption would take place during weekends and off-peak hours. This should be done through the San Francisco Committee for Utility Liason on Construction and Other Projects (CULCOP).

18. The overload that would occur in Muni, BART, A-C Transit and the SamTrans mainline route (highway 101) due to cumulative development in the Downtown area could be mitigated by provision of additional buses, by headway changes, and possibly by shifts in routes. Implementation of this mitigation measure by the applicable transit carriers would depend primarily on the availability of funds and on actions initiated by MTC and the respective transit agencies and districts.

● 19. Modification of the traffic signalization at the intersection of Pine and Front Sts. could be implemented by the Department of Public Works, if such action were determined appropriate by the agency, to reduce pedestrian and vehicle conflicts resulting from operation of the project. A "scramble," or exclusive - pedestrian phase could be employed there. The left of the two through lanes in the northbound approach of Front St. to Pine St. could be designated a left/through lane, to reduce the awkwardness of maneuvers out of the project garage onto Pine St.

- 19A. The projected peak-hour level of service at the Mission-Beale intersection would be reduced to F under the cumulative development conditions. The San Francisco Department of Public Works (DPW) could mitigate this effect by prohibiting left turns from Mission St. onto Beale St. and by restriping the Beale St. approach to the intersection from four lanes to five lanes (and removing parking). These changes would change the Level of Service from F to E during the p.m. peak-hour (volume-to-capacity change from 1.60 to 1.00). Such a measure would be under the jurisdiction of the DPW and would be considered as a possible mitigation measure at such time as the projected conditions develop. Another effect of this measure would be to cause traffic currently turning left to redistribute to other intersections.

- 19B. The critical approach to the Mission-Main intersection is the freeway off-ramp which currently has two lanes northbound onto Main St. and a left turn lane. The volume projected to use these lanes, including cumulative development, would decrease the level of service to F; as the projected volume would exceed the carrying capacity of the freeway off-ramp as it is currently constructed. An additional left turn lane would need to be added to increase the capacity of the off-ramp. More green time could be allocated to the appropriate phase of the traffic signal by prohibiting left turns from Mission St. onto Main St. This measure would change the Level of Service from F to E for the a.m. peak-hour (volume-to-capacity change from 1.32 to 0.94). Prohibition of left turns on Mission St. would be under the jurisdiction of the DPW. Lane additions on the off-ramp would be under the jurisdiction of CalTrans.

MEASURE REJECTED

20. The provision of loading facilities to accommodate semi-trailers has been rejected by the project sponsor due to the configuration of the proposed parking facility and to lack of space.

D. AIR QUALITY

MEASURES PROPOSED AS PART OF THE PROJECT

21. During excavation, unpaved demolition and construction areas would be wetted at least twice a day to hold down dust; this would reduce particulate emissions (dust) by about 50 percent. A solid fence would be provided around the construction site to further reduce dust.

22. The project contractor would maintain and operate construction equipment in such a way as to minimize exhaust emissions. During construction, trucks in loading or unloading queues would be kept with their engines off when not in use to reduce carbon monoxide emissions. The project sponsor would meet with the Department of Public Works to discuss and agree upon a scheduling program to minimize the queuing of construction vehicles.

23. Interior air quality would be controlled by a variable-air-volume ventilation system that would provide a minimum of two to three air changes per hour in occupied spaces. Ventilation air would be a filtered mixture of outside and recirculated air, and would maintain or surpass applicable outdoor air quality standards.

E. CONSTRUCTION NOISE

MEASURES PROPOSED AS PART OF THE PROJECT

24. The project contractor would muffle and shield intakes and exhaust, shroud or shield impact tools, and use electric-powered rather than diesel-powered construction equipment, as feasible.

V. Mitigation

25. The project contractor would limit piledriving to the hours resulting in the least disturbance to neighboring uses. Work after 7:00 p.m. would require a night-work permit from the Department of Public Works. The project sponsor and project contractor would meet with the Bureau of Engineering to determine specific hours and additional necessary and feasible measures to reduce noise during the period that piledriving would occur.

26. The general contractor would construct barriers around the site, and around stationary equipment such as compressors, which would reduce construction noise by as much as 5 dBA. The general contractor would locate stationary equipment in pit areas or excavated areas as these areas would serve as noise barriers.

F. ENERGY

MEASURES PROPOSED AS PART OF THE PROJECT

27. The project would exceed the minimum energy use requirements of Title 24 of the California Administrative Code. Based on initial estimates presented in the energy section of this report, the project would exceed Title 24 standards by about 10 percent.

28. Whenever possible, office suites would be equipped with individualized light switches, time clock operation, and fluorescent lights to conserve electric energy. Individually metered water and electric services for the residential units would provide an incentive to reduce energy consumption.

29. The heating, ventilating and air conditioning (HVAC) system would be equipped with an economizer cycle to use outside air for cooling, as feasible. Apartments would have windows that would open for natural ventilation.

30. Residential and office water heating systems would be insulated to minimize waste heat. In residential units, water heaters would be placed as close as possible to the source of use (sinks, showers, dishwashers), to minimize heat loss.

31. Project energy use would be monitored and/or controlled by a computer-based building automation system.

32. The project would provide containers, to be located on the first parking level, available to tenants of the entire building for collection of recyclable solid wastes (such as glass, metal, computer cards, and newspaper) and the building manager would contract for recycling service.

MEASURES RECOMMENDED AND/OR UNDER CONSIDERATION

33. The project sponsor is investigating the feasibility of passive or active solar features for residential units and common areas; such features could be incorporated into the project, if proven feasible.

34. The project sponsor is considering incorporating load management measures to lower the building energy demand during PG&E peak-hour demand periods.

35. The project sponsor is investigating the use of openable windows for the commercial portions of the building and install, if feasible.

36. The project sponsor is investigating methods of utilizing waste heat from the commercial portions of the building to heat the residential units. If such a method proves technically and economically feasible it would be included as part of the project.

MEASURES REJECTED

37. Double or triple paned windows were rejected by the project engineers because they would unnecessarily insulate the building, increasing the cooling demand of the project, and would represent increased energy costs and consumption of energy for fabrication of building materials.

V. Mitigation

38. Use of natural gas in the condominiums for cooking and heating has been rejected by the project engineers because it would be infeasible to provide individual natural gas connections to the condominiums. Natural gas is not feasible for residential use on the upper floors due to metering, flue and venting problems.

G. GEOLOGY, SEISMOLOGY, AND HYDROLOGY

MEASURES PROPOSED AS PART OF THE PROJECT

39. The project sponsor would have a geotechnical report prepared by a California licensed engineer, and would comply with the recommendations of that report for foundation design and site preparation.

40. During project excavation, the contractor would install groundwater observation wells and monitoring instruments to monitor the levels of the water table and potential settlement. If, in the judgment of City engineers, unacceptable subsidence occurs during construction, the contractor would recharge the groundwater table to halt the settlement. The City would require a lateral and settlement survey to monitor any movement or settlement of surrounding buildings and adjacent streets during the dewatering. Control lines and benchmarks would be established for monitoring horizontal and vertical movement. Costs for the survey and any necessary repairs to services under the streets would be borne by the contractor.

41. During construction, the contractor would sweep streets mechanically or by hand to prevent siltation of storm drains and generation of dust. The contractor would also confine construction equipment, maintenance, and refueling activities to locations where petroleum spillage would be contained.

42. Windows would be installed in the project in such a way as to minimize the possibility of breakage during an earthquake, and to maximize the possibility of glass falling inward, rather than outward, should windows break.

43. Subdrains would be provided beneath the parking facility to remove groundwater which could potentially seep into the structure.

44. The project sponsor would post a surety bond if required by the San Francisco Department of Public Works before issuance of a permit to excavate. Such a bond would protect the City against damages to City-owned sidewalks, streets and utilities.

45. The project sponsor would require the project contractor and sub-contractor to obtain a Faithful Performance and Payment Bond, if proper financial capability is not evident, and to be responsible for any damage to existing buildings which might result from excavation. This bond would protect the project sponsor and owners of nearby properties if any damage to these properties were to result from construction activities.

H. CULTURAL

MEASURE PROPOSED AS PART OF THE PROJECT

46. Should evidence of cultural or historic artifacts of significance be found during project excavation, the Environmental Review Officer and the President of the Landmarks Preservation Advisory Board would be notified. The project sponsor would select an archaeologist or other expert to help the Office of Environmental Review determine the significance of the find and whether feasible measures, including appropriate security measures, could be implemented to preserve or recover such artifacts. The Environmental Review Officer would then recommend specific mitigation measures, if necessary, and recommendations would be sent to the State Office of Historic Preservation. Excavation or construction which might damage the discovered cultural resources would be suspended for a maximum of four weeks to permit inspection, recommendation and retrieval, if appropriate.

I. UTILITIES AND PUBLIC SERVICES

47. An evacuation and emergency response plan would be developed by the project sponsor or building management staff, in consultation with the Mayor's Office of Emergency Services, to ensure coordination between the City's emergency planning activities and the project's plan and to provide for building occupants in the event of an emergency. The project's plan would be reviewed by the Office of Emergency Services and implemented by building management before issuance by the Department of Public Works of final building permits.

48. The project would incorporate low-flow faucet, shower and toilet fixtures to reduce water consumption and wastewater generation.

49. When in operation, the project would provide internal security measures to reduce the demand on police services. These measures would include a closed-circuit TV system, security guards, well-lighted entries, alarm systems, and separate entrances for residential areas of the building with call-telephones and computerized lock systems.

50. The building would be equipped with a trash compactor to reduce the volume of solid waste requiring storage and transport. Separate storage facilities for recyclable waste material would be provided for both office and residential uses.

● VI. SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED
IF THE PROJECT IS IMPLEMENTED

This chapter covers significant impacts described in Chapter IV, Impacts, pp. 55-117, that would occur regardless of whether or not mitigation measures described in Chapter V, Mitigation, pp. 118-127, are implemented.

CUMULATIVE OFFICE DEVELOPMENT

As part of a trend of denser development in Downtown San Francisco, the project would contribute to cumulative traffic increases Downtown and cumulative increases in passenger loadings on BART, Muni and other transit agencies.

VI. Significant Environmental Effects

VII. ALTERNATIVES TO THE PROPOSED PROJECT

Several alternatives to the project as proposed are described and compared below. With the exception of Alternative Six, The No Project Alternative, all of these project alternatives contemplate development at the same location as the proposed project. The project sponsor has considered or is considering each of these alternatives.

A. ALTERNATIVE ONE: INCREASED RESIDENTIAL FLOOR AREA

This alternative would result in development of a combined office and condominium residential building on the project site. The alternative design would not conform to the City Planning Code and Interim Controls and its approval by the City Planning Commission would require a modification of the Code. Alternative One would contain a total of 30 stories and be about 430 ft. tall, about 55 ft. taller than the project (see Figure 28). This alternative would be similar to the project in bulk and design; the subsurface parking, retail and office floors would be identical to the project except that access to the parking levels would be provided via two adjacent ramps for egress and ingress, rather than a single ramp as proposed for the project. Alternative One would include about 90 condominiums, 33 more than the project. This alternative would respond to evolving City housing policy contained in Guiding Downtown Development, which recommends that 640 sq. ft. of residential use be constructed for each 1000 sq. ft. of office space.

As in the proposed project, gross floor area of the commercial portion of the building would be approximately 257,000 sq.ft., an FAR of about 14:1. The plans for Alternative One include about 144,000 gross sq. ft. of housing for an additional FAR of about 7.8:1. The total gross floor area for the building would be approximately 401,000 sq. ft., (compared to 342,900 sq. ft. for the project) representing an FAR of about 21.8:1 (compared to 18.7:1 for the

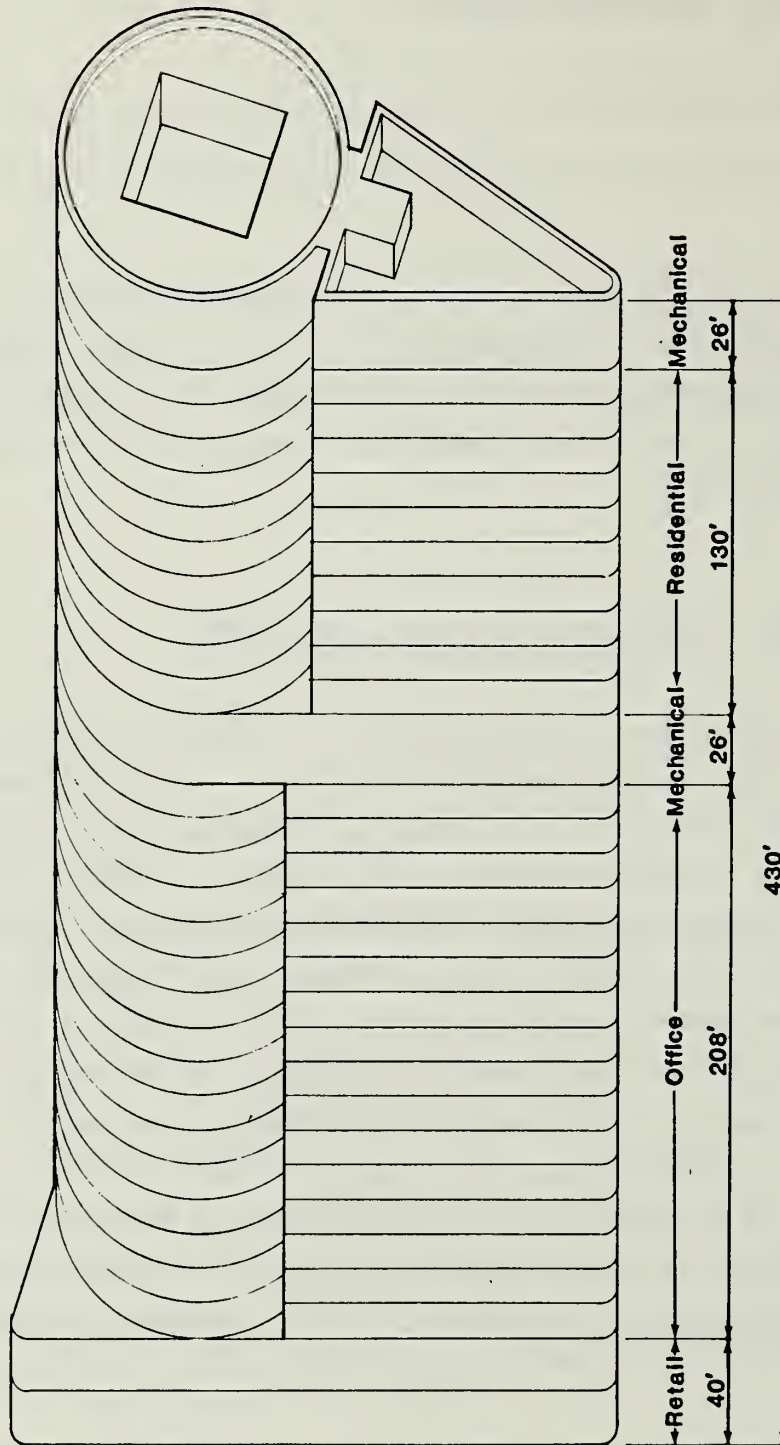


FIGURE 28: Alternative One - Increased Residential Floor Area

SOURCE: Skidmore, Owings and Merrill

project). The project sponsor would apply for a Conditional Use authorization for approximately 85,900 sq. ft. of bonus floor area. Applicable bonuses, allowed under Section 126 of the City Planning Code, would be used for residential space as provided for under the Interim Controls. The sponsor would request bonuses for rapid transit access, multiple building entrances, sidewalk widening, shortened walking distances, and a rooftop observation deck (See Table 1, p. 24). Alternative One proposes a total of 144,000 sq. ft. of residential space (compared to 85,900 sq. ft. for the project), about 58,100 sq. ft. more than identified bonuses would allow. Because it would exceed the allowable FAR of 14:1 plus bonus space, Alternative One would not conform to the City Planning Code. Therefore, the City Planning Commission could not approve this alternative as proposed. An amendment of the City Planning Code and possibly a change in the Interim Controls would be required to allow approval of this alternative.

According to Section 302 of the City Planning Code, an amendment may be initiated by the Board of Supervisors or by a resolution of intention by the City Planning Commission. An interested property owner may not initiate changes in the text of the Code. If approved by the City Planning Commission, a proposed amendment must be presented to the Board of Supervisors and the Board can adopt the amendment by a majority vote. There are several ways in which the Planning Code could be modified to permit the area of on-site housing proposed under Alternative One. The alternative could be approved by modification of Section 304 of the Code concerning sites which qualify for Planned Unit Developments. Another way the Code could be modified to allow approval of Alternative One would be to amend Section 126(b) which describes development bonuses in C-3 Districts. Were Section 126 to be amended, corresponding changes in the Interim Controls for the Downtown also would be required to allow the new floor area bonus.

This alternative would contain the same maximum diagonal dimension as the project, about 220 ft.; as with the proposed project, a Conditional Use authorization would be required to exceed the maximum permitted length and diagonal bulk limitations of the Code. There would be two levels of subsurface parking, accommodating about 47 passenger vehicles. As for the proposed project, a revocable encroachment permit would be required to allow

VII. Alternatives to the Proposed Project

the subsurface parking levels to extend beneath the Pine St. and Front St. sidewalks. Two loading docks would be accessible at grade from Front St. to comply with the number required by the City Planning Code and City Planning Commission Resolution No. 9286, dated January 21, 1982. As with the project, the curb cut dimensions on Front St. for access to the loading dock and parking levels would not conform to Resolution No. 9286 requirements.

There would be two levels of retail use containing a total of about 10,000 sq. ft. of space, separate lobby and elevator access to the residential and office portions of the building, and a direct connection to the Embarcadero Station of the Market St. subway. The building would contain 16 floors of office space, two full floors of mechanical space and ten full floors of residential space. According to Section 134 of the City Planning Code, a 25 percent rear yard would be required at each residential level in this C district. As with the proposed project, Alternative One would require a variance from this requirement.

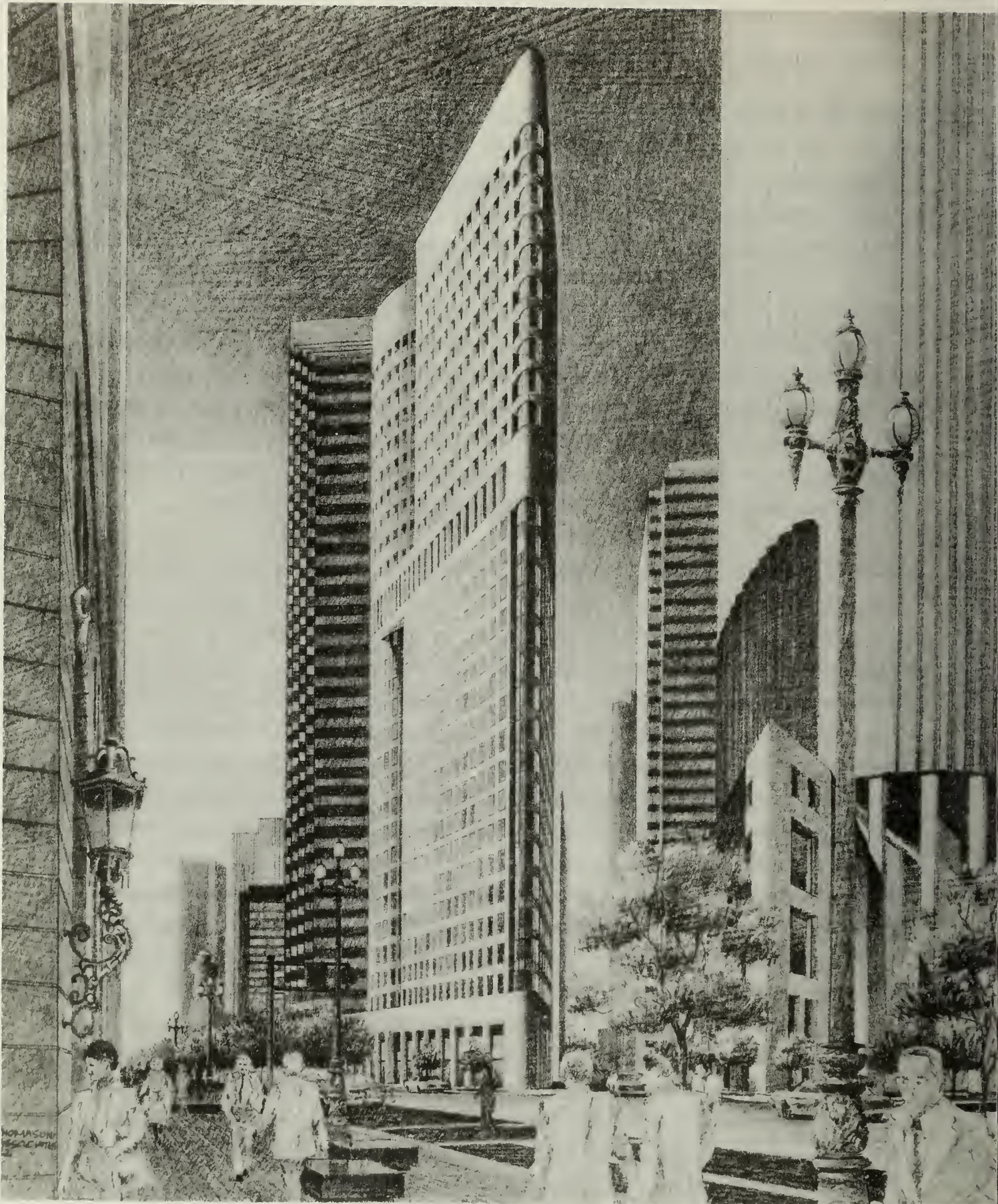
The impacts of this alternative would generally be similar to those described in the Environmental Impacts section of this report (see Section IV, pp. 55 - 117) for the office portion of the proposed project. By providing more residential units than the project, this alternative would satisfy the net housing demand of about 80 units which would be generated by the office portion of the building. An amendment to the City Planning Code which could allow the amount of on-site housing proposed for this alternative would have an impact on subsequent development in the C-3 District. Such a modification to the Code would encourage the provision of additional on-site housing in future high-rise development. It is likely that such an amendment to the Planning Code would result in buildings which exceed the maximum FAR and height recommendations contained in the Department of City Planning document Guiding Downtown Development. It is not possible to determine the exact location, size, or number of buildings which might be proposed as a result of such a change in the Planning Code. Modification of the Planning Code to allow approval of the project would generally encourage more housing units in the C-3 District. An increase in housing would result in greater development of residential retail facilities and domestic conveniences, as well as greater 24-hour activity, in the Downtown.

VII. Alternatives to the Proposed Project

The building tower would be more visible than existing structures on the site and about 55 ft. taller than the proposed project (see Figure 29). The effect of this alternative on views of existing buildings in the site vicinity would be greater than the proposed project because of the increased height. Shadow effects would also be increased under this alternative.

As with the proposed project, this alternative would result in demolition of the two existing structures on the site. Transportation, air quality, noise and dewatering impacts associated with building construction would generally be similar to those for the proposed project, although the construction period would be longer due to the increased building size. Energy consumption for the office portion of the building would be the same as with the project; the residential energy consumption would be about 40 percent greater.

Operational traffic impacts would be slightly more for Alternative One than for the proposed project. Approximately 470 net peak-hour person-trips would be created under this alternative compared to about 425 from the proposed project. Peak-hour Muni demand under this alternative would exceed project demand by about 11 percent; as with the project, this would be less than one percent of overall demand in 1984. Alternative One would generate 11 percent more pedestrians than the project; flows would continue to range over one to four pedestrians per foot of effective sidewalk width per minute on the site block. Service levels at crosswalks would be the same as for the proposed project. Trips to the parking facility would be equal to that of the project, therefore, conflicts between pedestrians and vehicles accessing the parking levels would be the same as with the single ramp design proposed for the project. Under the double ramp design of Alternative One inbound vehicles would not be required to wait on Front St. for outbound garage traffic to clear the ramps. The parking deficit for this alternative would be approximately the same as that of the proposed project. Service deliveries would increase by approximately 11 percent with proportionally greater pedestrian conflicts in front of the loading docks. Curbside loading and pedestrian/vehicle conflicts would be expected to occur about 11 percent more often than with the proposed project.



See Note /1/ , p.26, for a discussion
of the Rendering perspective

FIGURE 29: Rendering of Alternative One
from Market Street looking
West

SOURCE: Skidmore, Owings and Merrill

Alternative One has been rejected by the project sponsor because it does not conform to the City Planning Code. The project sponsor would develop this alternative if the City Planning Commission and Board of Supervisors would modify the Planning Code to permit the amount of on-site housing proposed under Alternative One.

B. ALTERNATIVE TWO: 14:1 PLUS BONUSES OFFICE BUILDING

This alternative represents that which would have been permitted before the Interim Controls (Municipal Ordinance 240-80) on the use of floor area bonuses. If the Interim Controls expired without implementation of any other new controls, permitted bonus space could be used to increase the commercial floor area of the building. Bonuses for rapid transit access, multiple building entrances, sidewalk widening, shortened walking distances, and a rooftop observation deck could permit about 85,900 gross sq. ft. of additional floor area (see Table 1, p. 24). Alternative Two would involve development of a 26-story office building, about 375 ft. tall; there would be no residential use provided on the site. This alternative would contain approximately 342,900 sq. ft. of commercial space, including 85,900 sq. ft. of bonus floor area, representing an FAR of about 18.7:1. The allowable basic FAR for the site of 14:1 would permit about 257,000 sq. ft. of commercial floor area, the amount proposed for the project. Applicable bonuses, allowed under Section 126 of the City Planning Code, could be added to the basic floor area to determine the maximum FAR of the building. Under the limitations imposed by the Interim Controls, permitted bonus space could be used for, and would be limited to, housing.

This alternative would be similar to the project in design and form, and would comply with the use provision of the City Planning Code. Alternative Two would contain the same maximum diagonal dimension as the project, about 220 ft.; Conditional Use authorization would be required to exceed the permitted bulk limitations of the Code. There would be a one-level subsurface parking facility accessed by a single ramp from Front St. The parking level would provide short-term accessory parking and accommodate about 22 passenger vehicles. As with the project, a revocable encroachment permit would be required for the parking level to extend beneath the Front St. and Pine St.

VII. Alternatives to the Proposed Project

sidewalks. Two loading docks accessible from Front St. would be provided; the number of loading docks would conform to the provisions of the City Planning Code, but would be one less than the number required by City Planning Commission Resolution No. 9286. There would be a double-height public gallery, two levels of retail space containing a total of about 10,000 sq. ft. and a direct connection to the Embarcadero Station of the Market St. subway. The building would contain 23 floors of office use, and a mechanical floor.

Land use effects would be similar to those of the proposed project, except that Alternative Two would not satisfy any of the housing demand which would be generated by on-site office space. Net housing demand generated by this alternative would be for about 160 residential units, approximately double the net demand of the proposed project. This alternative would not result in 24-hour activity on the site or increase demand for domestic-oriented retail services in the Financial District through the provision of residential space.

The building tower would be the same height as the proposed project and more visible than existing structures on the site. Urban design and shadow effects of this alternative would be similar to the proposed project.

As with the proposed project, this alternative would result in demolition of the two existing structures on the site. Transportation, air quality and noise impacts associated with building construction would generally be similar to those for the proposed project. Dewatering impacts would be reduced for this alternative because only one level of subsurface parking would be provided. Energy consumption for Alternative Two would be about 35 percent greater than that for office portion of the proposed project. Since no residential energy use would be involved in this alternative, total electrical use would be about 15 percent less than the project; total natural gas use would be about the same as for the project.

Operational traffic impacts would be similar to the proposed project. The number of net peak-hour person-trips (440) created under this alternative would be approximately the same as for the proposed project (425). Impacts on Muni and the regional transit carriers would be similar and represent less than one percent of overall demand. Pedestrian flows would be similar to

those from the proposed project. Parking would be provided for about 22 automobiles; the demand for parking would be for 430 spaces, 360 long-term and 70 short-term (less than 6 hours). Since the proposed project would have 47 basement garage spaces, this alternative would offer about half as many conflicts of pedestrians with vehicles in the curb cut of the project's garage ramp. With two loading docks provided, the occurrence of pedestrian conflicts with trucks and service vehicles and curbside loading would be similar to that of the proposed project. The level of service on Front St. would not be affected by this alternative.

Alternative Two would be desirable to the project sponsor; however, this alternative has been rejected because it does not comply with the limitations on the use of floor area bonus required by the Interim Controls.

C. ALTERNATIVE THREE: GUIDING DOWNTOWN DEVELOPMENT ALTERNATIVE

This alternative would be designed to comply with the guidelines contained in Guiding Downtown Development (GDD), published by the Department of City Planning in May 1981. GDD contains a series of regulatory proposals for managing development in downtown San Francisco affecting size, design, use and location of major buildings. The report proposes changes in the City Planning Code regulations for the C-3 Planning Code Use Districts pertaining to housing, transportation, open-space, and historic preservation. Table 13, p. 142, compares existing development controls contained in the City Planning Code, proposed changes in those requirements contained in GDD, and relevant characteristics of the proposed project.

This alternative would be a 24-story combined office and residential building, approximately 340 ft. tall. Alternative Three would be about 35 ft. shorter than the proposed project. The structure would contain about 220,000 gross sq. ft. of office and commercial space, about 37,000 sq. ft. less than the project, representing the GDD maximum commercial FAR of 12:1. Residential use would occupy about 91,800 gross sq. ft., about 5,900 sq. ft. more than the project, for an additional FAR of 5:1. Assuming an average residential floor area per unit of about 1,500 gross sq. ft. (approximately the same residential

VII. Alternatives to the Proposed Project

floor area per unit proposed as part of the project), about 61 residential units could be provided, or four more than the number proposed with the project. The overall FAR of this structure would be about 17:1, which is the maximum allowed under GDD. This includes 5:1 additional FAR for housing, if the maximum commercial FAR of 12:1 were developed. This alternative, containing a total of about 311,800 gross sq. ft., about 31,100 sq. ft. less than the project, would be 160 ft. shorter than the height limit for the site recommended in GDD of 500 ft. (see Figure 30 p. 140).

Under this alternative, there would be one level of subsurface parking accessible via a single lane ramp from Front St., and accommodating about 22 vehicles. All parking would be allocated for the residential units; there would be no short-term parking for the commercial portion of the building. As with the project, a revocable encroachment permit would be required for the parking level to extend beneath the Front St. and Pine St. sidewalks. Three loading docks would be provided at grade to comply with the recommended off-street loading space requirement contained in GDD. Appendix D of GDD contains proposed requirements for off-street loading and service vehicle access. This alternative would not conform to these requirements in the following ways: the curb cut for the loading dock would be about 40 ft., compared to a maximum recommended of 24 ft.; and the total length of curb cuts on Front St. for the loading and off-street parking spaces would be about 50 ft., compared to a maximum recommended of 36 ft. This alternative would comply with the GDD recommendation that the combined total width of curb cuts not exceed 33 percent of any single street frontage.

As with the proposed project, there would be two levels of retail space containing a total of about 10,000 sq. ft., and separate lobby and elevator access to the residential and office portions of the building. A direct connection to the Embarcadero Station of the Market St. subway would not be provided under Alternative Three because it would not be needed to request the maximum amount of bonus floor area for residential use and there would be no other incentive. The building would contain 12 floors of office space, two floors of mechanical space between the office and residential space, and eight floors of housing, for a total of 24 stories.

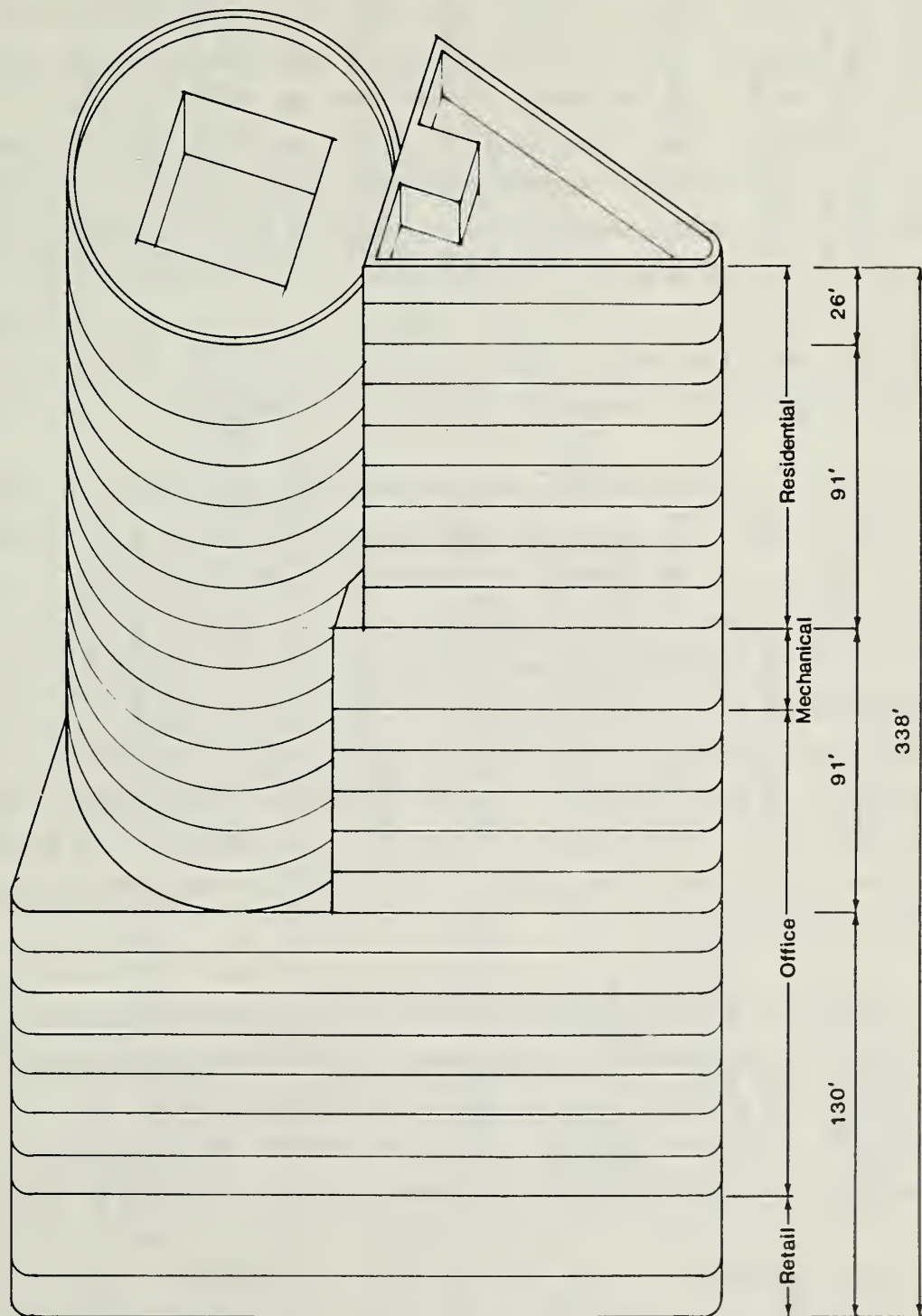


FIGURE 30: Alternative Three—Guiding Downtown Development Alternative

SOURCE: Skidmore, Owings, & Merrill

GDD, would require that the average floor area above 65 ft. not exceed 20,000 sq. ft., and that the average floor area of floors above the midpoint of the height of the building be 2/15ths less than the average floor area of floors below the midpoint. This alternative would comply with the provisions for transfer of bulk from the upper to lower stories of the structure by upper level setbacks and reductions in floor area (see Figure 30). Alternative Three would have the same maximum dimension as the project, about 220 ft; a Conditional Use authorization would be required for this alternative to exceed the average maximum plan dimension of 200 ft. recommended in GDD. According to Section 134 of the City Planning Code, a 25 percent rear yard would be required at each residential level in this C district. As with the proposed project, Alternative Three would require a variance from this requirement.

This alternative would provide the maximum amount of commercial space permitted in GDD. The GDD guidelines specify that housing be provided at the rate of 640 sq. ft. of housing per 1000 sq. ft. of office space. Using this formula, approximately 134,400 gross sq. ft. of residential space (about 190 units) would be necessary to meet the proposed housing requirement, representing an FAR of about 7.3:1. As the maximum amount of commercial floor area would be developed, this amount of residential space could not be accommodated on the site under the FAR limitations recommended in GDD. If 91,800 sq. ft. of housing were provided on-site, an additional 42,600 sq. ft. of housing would have to be constructed off-site to meet the proposed total housing requirement.

This alternative would incorporate art work into the public gallery of the building. The proposed art requirement in GDD specifies that investment in art be equal to at least one percent of total construction costs. Open space for project residents would be provided by private balconies for individual condominiums to satisfy the useable open space requirements of Section 135 of the City Planning Code. For non-residential use, the proposed recreation and open space requirement in GDD, which would total 8,800 sq. ft. for this alternative, could be partially met on-site. An athletic health club, containing about 3,800 sq. ft. would provide common open space for residents and employees of the building and the double height public gallery would

TABLE 13: COMPARISON OF EXISTING DEVELOPMENT CONTROLS TO PROPOSED CHANGES CONTAINED IN GUIDING DOWNTOWN DEVELOPMENT, MAY 1981

Major Development Controls Pertaining to Project Site	Present Requirements- City Planning Code and Interim Controls	Proposed Requirements- Guiding Downtown Development	Proposed Project
Base FAR	14:1	12:1*	14:1 commercial plus 4.7:1 residential
Height Limit	600 ft.	500 ft.	375 ft.
Average Area per Floor	Not specified	20,000 sq. ft. above 65 ft.	15,000 sq. ft. above 65 ft. (office floors)
Maximum Diagonal Maximum Length	200 ft. above 150 ft. in height 170 ft. above 150 ft. in height	Average maximum plan dimension less than 200 ft.	220 ft. above 150 ft. in height 220 ft. above 150 ft. in height
Size of Upper Floors	Not specified	Average floor area of floors above midpoint of building height to be 2/15 (13%) less than average floor area of floors below midpoint.	Average floor area of residential floors approximately the same as average floor area of office
Incorporation of Art	Not required	Art equal to 1% of total construction cost.	Art proposed for ground floor; cost not determined
Ground-floor retail	Not required	2,000 maximum sq. ft. per use to obtain floor area bonus	10,000 sq. ft. proposed to accommodate about four tenants on the first and second floors
Recreation/Open space	Not required for commercial uses; required for dwellings	1 sq. ft. for public use per 25 sq. ft. of gross floor area (about 8,800 sq. ft. at an FAR of 12:1)	Open space for project residents provided by private balconies and an athletic health club.
Off-street loading	2 spaces for buildings containing 200,001 to 500,000 sq. ft., plus 1 space for retail use between 10,001 and 60,000 sq. ft.	0.1 spaces per 10,000 sq. ft. of gross floor area for buildings containing more than 100,000 ft., plus 1 space for retail use between 10,001 and 60,000 sq. ft. (three spaces for the site).	2 spaces provided, as required by the City Planning Code
Long-term Parking	None required for commercial uses; one space required for each four dwelling units	None permitted for office uses	Long-term parking only for residential use
Provision of a Transportation Broker	None required	Proposed Requirement	Transportation broker would be provided
Provision of Housing	None required; floor area bonuses may be used for on-site housing.	640 sq. ft. per 1,000 sq. ft. of office space, about 190 units for site; Maximum FAR equal to 5:1 on-site	85,900 sq. ft., 57 on-site condominiums, proposed for an FAR of 4.7:1

* Additional FAR allowable for provision of housing (5:1); retention of or transferring development rights from significant architectural buildings (3:1); and for the provision of retail uses containing 2,000 sq. ft. or less per use (0.5:1). Maximum FAR, including allowable bonuses, would be 17:1.

SOURCE: City Planning Code; and Guiding Downtown Development, May 1981.

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contain about 2,400 sq. ft. of space. The remaining open space requirement of about 2,400 sq. ft. would have to be provided off-site at another location in a C-3-0 district or by reducing the amount of ground floor retail space.

This alternative would comply with the general objectives of the San Francisco Comprehensive Plan and with the use provisions of the City Planning Code. The building tower would be more visible than existing structures on the site, but would be about 35 ft. shorter than the proposed project. The effect of this alternative on views of existing buildings and shadow patterns in the site vicinity would be less than the proposed project because of the reduced height.

This alternative would result in demolition of the two existing structures on the site. Transportation, air quality and noise impacts associated with building construction would generally be similar to the proposed project. Dewatering impacts would be reduced under Alternative Three as only one level of subsurface parking would be provided. Energy consumption for the office portion of the building would be about 15 percent less than for the project. Residential consumption would be about seven percent greater than the project. Total energy consumption would be about seven percent less than for the proposed project.

Operational traffic impacts would be less than those of the proposed project due to the decreased office space and the fewer number of on-site parking spaces provided. The number of net peak-hour person-trips (257) from this alternative would be about 40 percent less than for the proposed project. The number of Muni trips would be reduced in comparison to the project to about 110. Under Alternative Three, regional carriers would carry 40 percent fewer site related trips. Flows on sidewalks adjacent to the building would not be perceptably altered from project conditions, nor would the flows at the Pine and Front St. crosswalks. Trips to the parking facility would be reduced by approximately 50 percent in proportion to the reduction in parking spaces under this alternative. The parking deficit would be greater than that of the proposed project by approximately 20 automobiles. The occurrence of curbside loading would be reduced from project conditions. Pedestrian and service vehicle conflicts would increase approximately 35 percent because of trucks crossing the Front St. sidewalk to access the extra loading dock provided under this alternative.

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The project sponsor has rejected this alternative as not providing the amount of office space permitted under the City Planning Code and proposed for the project.

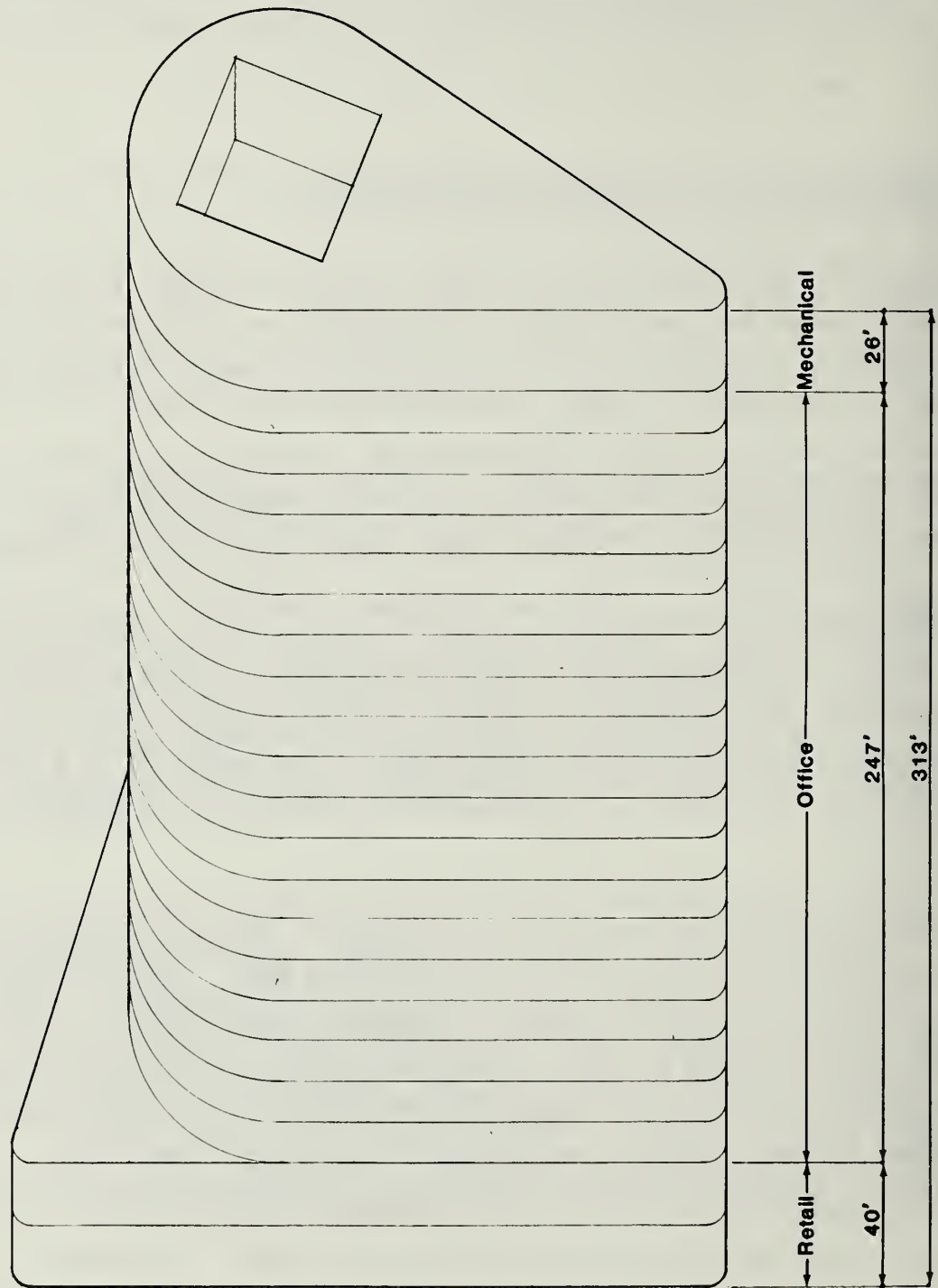
D. ALTERNATIVE FOUR: CODE-CONFORMING ALTERNATIVE

This alternative would consist of a 22-story office building, about 315 ft. tall, developed on the project site. Alternative Four would be about 60 ft. shorter than the proposed project. It would contain approximately 257,000 gross sq. ft. of commercial space, representing an FAR of about 14:1. There would be two levels of retail space containing a total of 10,000 sq. ft., 19 floors of office use, and a mechanical floor. There would be no residential development on the site, and no bonus floor area would be used.

Under Alternative Four there would be no off-street vehicle parking provided on the site. Two loading docks would be accessible, at grade from Front St., to conform with the requirements of the City Planning Code (Section 152) and City Planning Commission Resolution No. 9286. There would not be a direct connection from the project to the Embarcadero Station of the Market St. subway.

This alternative would be similar to the project in design and form, and would comply with the use provision of the City Planning Code. The building tower would be shorter in length and diagonal dimension than proposed for the project; the tower would be setback along the entire site frontage on Front St. (see Figure 31, p. 145). The maximum building length would be 170 ft. and the maximum diagonal dimension would be 200 ft.; a Conditional Use authorization would not be required to exceed the bulk limitations of the Code.

Land use effects would be similar to those of the proposed project except that no residential use would be included; Alternative Four would not satisfy any of the housing demand which would be generated by on-site office space. Net housing demand would be for about 80 units, the same as for the proposed



**FIGURE 31: Alternative Four -
Code-Conforming Alternative**

SOURCE: Skidmore, Owings and Merrill

VII. Alternatives to the Proposed Project

project. This alternative would not result in 24-hour activity on the site or increased demand for domestic-oriented retail services in the Financial District through the provision of residential space.

Urban design and shadow effects of this alternative would differ from the proposed project because of the decreased building height; however, the building tower would be more visible than existing structures on the site. Pedestrian-level views from near the site would be similar to those of the project as proposed except that the building bulk would be reduced along Front St.

This alternative would result in demolition of the two existing structures on the site. Transportation, air quality and noise impacts associated with building construction would generally be similar to the proposed project, although the construction period would be slightly shorter due to the decreased building size. Dewatering impacts would be eliminated under this alternative as no subsurface parking would be provided. Energy consumption impacts would be similar to the proposed project for the office portion of the building. In total, this alternative would consume about 37 percent less electricity and 25 percent less natural gas than the project because residential use would not be included.

Operational traffic impacts on Front St. would be less than those associated with the project, as no off-street parking would be provided. The estimated number of net peak-hour person-trips from this alternative would be about 440, approximately equal to that of the proposed project (425). Impacts on Muni and the regional carriers would be the same as those from the proposed project. Since no parking would be provided, the parking deficit would be approximately 430 spaces. The vehicle queue on Front St., of traffic waiting to turn left on to Pine St., would not be affected under this alternative. The frequency of curbside loading and pedestrian/vehicle conflicts would be similar to that of the proposed project.

The project sponsor has rejected this alternative as not contributing housing to partially meet existing demand in San Francisco.

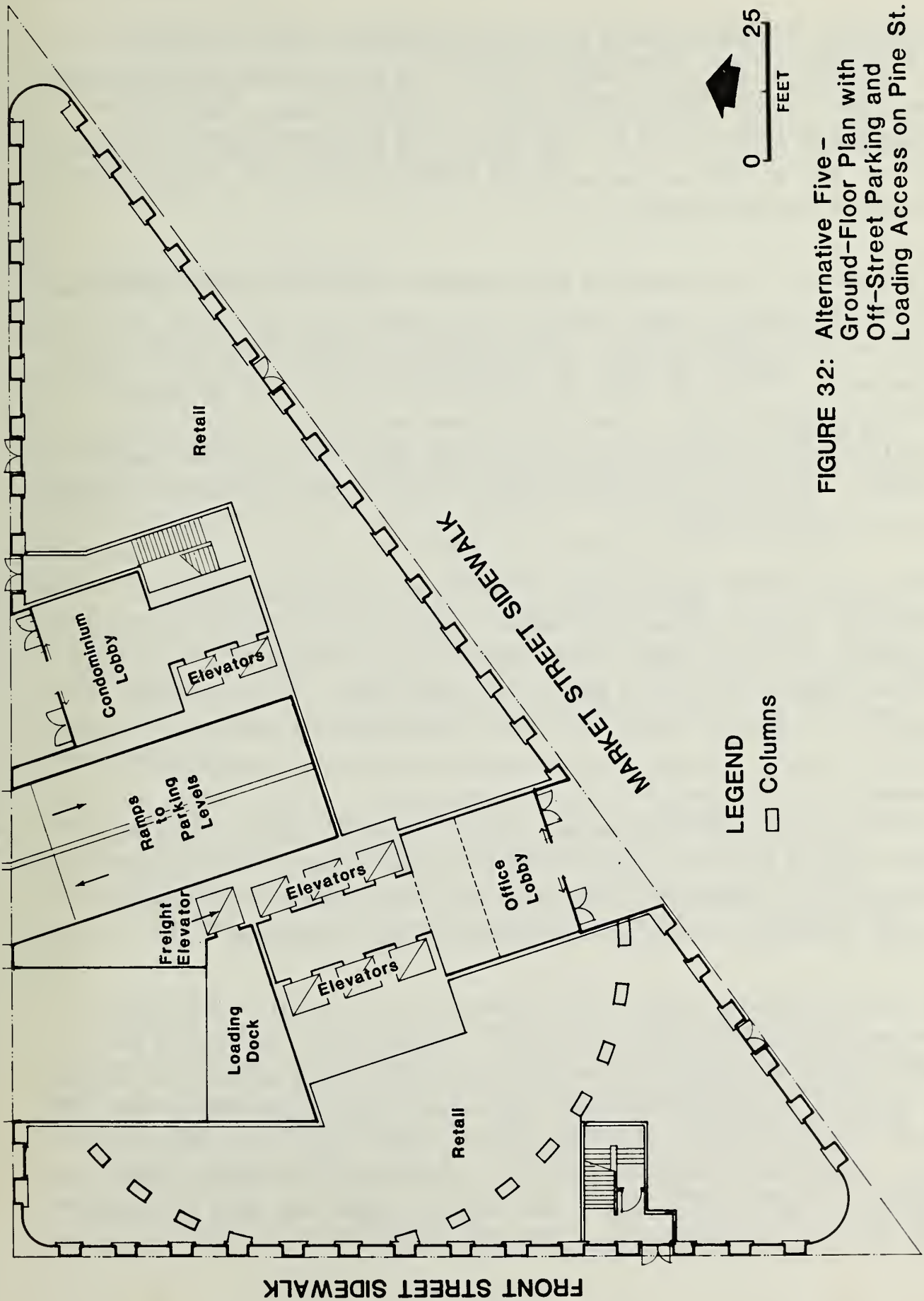
E. ALTERNATIVE FIVE: OFF-STREET PARKING AND LOADING ACCESS ON PINE ST.

This alternative would develop a 25-story combined office and residential building approximately 365 ft. tall. Alternative Five would feature access to all loading and off-street parking on Pine St., rather than on Front St. as proposed for the project (see Figure 32, p. 148). Separate residential and office lobbies would be provided, but there would not be a double height public gallery through the building connecting the major building entrances. The revised ground floor plan would result in a decreased amount of requested bonus floor area and reduced residential space in comparison to the project. The sponsor would request bonuses for rapid transit access, multiple building entrances and a rooftop observation deck as described for the project (see Table 1, p. 24). Requested bonuses for sidewalk widening and shortened walking distance would total 9,200 sq. ft., about 5,300 sq. ft. less than the amount which would be requested under the proposed ground floor plan.

Alternative Five would contain about 257,000 gross sq. ft. of commercial space for an FAR of 14:1. Residential space would occupy about 80,600 sq. ft., about 5,300 sq. ft. less than proposed in the project, for an additional FAR of about 4.4:1. This alternative would contain a total of about 337,600 sq. ft. for an overall FAR of about 18.4:1. There would be one level of retail space containing about 8,000 sq. ft. and 17 floors of office space. The 19th floor would contain mechanical equipment and an athletic health club to serve as a common facility for residents and employees of the building. There would be six floors of residential use containing 54 condominiums, three fewer than for the project. As for the project, Alternative Five would require a variance from the residential rear yard requirement of Section 134 of the City Planning Code. The rooftop would contain a mechanical penthouse and a public observation deck.

Under this alternative there would be two levels of subsurface parking, accessible from a two lane ramp on Pine St. and accommodating about 45 vehicles. The parking spaces would be accessory uses to the residential and office portions of the building as proposed for the project; a revocable encroachment permit would be required to allow the subsurface parking levels to extend beneath the Pine St. and Front St. sidewalks. Two loading docks,

PINE STREET SIDEWALK



Retail

Condominium
Lobby

Elevators

Ramps
to
parking
Levels

Freight
Elevator

Loading
Dock

Elevators

Elevators

Office
Lobby

Retail

MARKET STREET SIDEWALK

FRONT STREET SIDEWALK

LEGEND

□ Columns

0 25
FEET



FIGURE 32: Alternative Five -
Ground-Floor Plan with
Off-Street Parking and
Loading Access on Pine St.

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accessible at grade from Pine St. would be provided to comply with the requirements of the City Planning Code and City Planning Commission Resolution No. 9286. The curb cut dimensions would not comply, however, with the requirements of Resolution No. 9286 because the combined length of curb cuts for the loading dock and parking garage would be about 50 ft., compared to a maximum allowable of 36 ft.

The impacts of this alternative would generally be similar to those described in the Environmental Impacts section of this report (see Section IV, pp. 55 - 117) for the proposed project. Net housing demand generated by this alternative would be for about 80 residential units, the same net demand as for the proposed project. The building tower would be more visible than existing structures on the site, but would be about 10 ft. shorter than the project. Urban design and shadow effects of this alternative would be similar to the proposed project.

Operational traffic impacts would be similar to the proposed project in magnitude, except that conflicts between pedestrians and vehicles would be reduced by about 25 percent. This reduction would be due to the location of project ramps to the parking garage and loading docks on Pine St. where pedestrian traffic is light. The number of net peak-hour person-trips (440) created under this alternative would be approximately the same as for the proposed project. Impacts on Muni and the regional transit carriers would be similar and represent less than one percent of overall demand. Pedestrian flows would be similar to those from the proposed project. Parking would be provided for 45 automobiles, about the same as the project. The level of service on Front St. would not be affected by this alternative.

As with the proposed project, this alternative would result in demolition of the two existing structures on the site. Transportation, air quality and noise impacts associated with building construction would generally be similar to those for the proposed project. Dewatering impacts would also be the same as for the project as two subsurface parking levels would be provided with this alternative. Energy consumption for Alternative Five would be about the same as for the office portion of the proposed project and about six percent less for the residential portion of the building.

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Alternative Five has been rejected by the project sponsor because it would not permit two levels of retail use and a double height public gallery connecting Pine and Market Sts. In addition, this alternative has been rejected as not providing the maximum amount of bonus floor area for residential use which may be requested with the preferred project design.

F. ALTERNATIVE SIX: NO PROJECT

This alternative would entail no change to the site. The two existing buildings on the site, at 320 and 340 Market St. would be retained.

In general, the environmental characteristics of this alternative would be substantially as described in the Environmental Setting Section of this report (see Section III pp. 27 - 54, for a discussion of existing conditions). Transportation, air quality and noise impacts associated with building construction would not occur. Transportation, transit and air quality conditions (described in Section IV of this report) as 1984 base conditions with cumulative development, but without the project, would exist on streets around the site in 1984. There would be no change in the demand from the site for community services. The businesses now operating on the site would not have to relocate.

This alternative would preserve options for future development of the site. It is not acceptable to the project sponsor because it would not provide additional office space and residential units to partially meet existing demand in San Francisco and because it would be an economic underuse of the site.

This alternative could result in the development of other office space, possibly a high-rise building comparable to the project at another location. Development elsewhere in Downtown San Francisco would generally result in impacts as described for the project. Development at a location outside of San Francisco would probably involve an office building without on-site housing. The impacts of such a project would largely depend upon the location chosen and cannot now be accurately determined. Development of the project at

VII. Alternatives to the Proposed Project

a different location has been rejected by the project sponsor because of the firm's association with the City of San Francisco, existing interests in the site and the sponsor's conviction that the project site is a prime location for housing in the City.

● G. ALTERNATIVE SEVEN: RELOCATED OBSERVATION DECK

This alternative would develop a 27-story combined office and residential building approximately 375 ft. tall. Alternative Seven would be similar to the project in bulk and design. The floor area calculations and requested bonuses under this alternative would be identical to those of the project as shown in Table 1 on p. 24. The only difference between Alternative Seven and the project would be the location of the observation deck and the numbering of the floors. As shown in Figure 12 on p. 22, the 19th floor of the project, containing mechanical equipment and the health club, would be a double-height floor. The 26-ft. ceiling height is necessary in that portion of the 19th Floor nearest Front St., to accommodate mechanical equipment. Under Alternative Seven, the project sponsor would construct a mezzanine level above the health club forming two floors nearest the prow of the building. The observation deck would be located on the 20th floor immediately above the health club. The residential portion of the building would remain the same under this alternative as shown in Figure 12 for the project except that the residential floors would be numbered 21 to 27.

The observation deck would be accessible by one of the office elevators which would serve the 20th floor directly from the ground level; the remaining office elevators would stop at the 18th floor, the last floor of office use. The observation deck would be opened to the public during normal business hours.

The impacts of this alternative would generally be the same as those described in the Environmental Impacts section of this report (see Section IV, pp. 55 -117) for the project. The project sponsor is considering this alternative.

VIII. Relationship Between Short-Term Use and Long-Term Productivity

VIII. RELATIONSHIP BETWEEN SHORT-TERM USE OF MAN'S ENVIRONMENT AND THE ENHANCEMENT OF LONG-TERM PRODUCTIVITY

This project is part of a continuing trend of denser development in Downtown San Francisco. These developments are forming a skyline characterized by high-rise office buildings in an area that is already urbanized. This area supplies the necessary facilities that provide unique employment opportunities and the basis for the regional economy. The applicant proposes on-site housing in conjunction with office development. An amendment to the City Planning Code would be required to allow approval of Alternative One because the combined office and residential floor area would exceed the allowable FAR for this alternative. Such an amendment could have an impact on future downtown developments and may result in the provision of more housing in the Downtown.

IX. SUMMARY OF COMMENTS AND RESPONSES

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A. INTRODUCTION

This document contains summaries of the public comments received on the Draft Environmental Impact Report (DEIR) prepared for the proposed 388 Market Street Building, and responses to those comments.

All substantive spoken comments made at a public hearing before the City Planning Commission, May 13, 1982, and all written comments received during the public review period from April 9, 1982 through May 19, 1982, have been reviewed and are presented herein by direct quotation, edited for repetition and nonsubstantive material only.

Comments and responses are grouped by subject matter and have generally been arranged by topics corresponding to the Table of Contents in the Draft EIR. Each group of comments is followed by its set of responses; the order of the responses under each topic follows the order of comments under that topic. As the subject matter of a topic may overlap that of other topics, the reader must occasionally refer to more than one group of Comments and Responses to review all information on a given topic. Where this occurs, cross-references are provided.

These comments and responses are incorporated into the Final EIR as a new chapter. Text changes resulting from comments and responses are also incorporated into the Final EIR, as indicated in the responses.

- Two addenda, dated October 28, 1982 and December 22, 1982, have been included in this section as staff initiated changes.
- A third addendum, dated November 18, 1982, has been added as sub-section E, of this section. This addendum makes changes to the Summary of comments and Responses document dated September 15, 1982.
- Changes from the text of the Draft Summary of Comments and Responses document are indicated by solid dots at the beginning of each revised paragraph or table.

B. LIST OF PERSONS COMMENTING

Susan Bierman, Member

City Planning Commission

Yoshio Nakashima, Vice President

City Planning Commission

Janet Cochran, Building Manager

444 Market Street

Cadillac Fairview / California, Inc.

Warren E. George, Attorney for,

Bunker Ramo Corporation

Howard L. Goode, Department Manager

Planning & Analysis, BART

Sue Hestor

Paul H. Hughes, Acting District CEQA Coordinator

California Department of Transportation - District 04

Tony Kilroy

San Franciscans for Reasonable Growth

Dr. Knox Mellon, State Historic Preservation Officer

Department of Parks and Recreation

Kay Pachtner

Consumer Action

Sally Ann Walters, President

Sally Walters Placement Agency

NOTE: Where a commentor submitted written comments in addition to comments made at the public hearing on the Draft EIR, the written comments have been incorporated into the hearing testimony and are indicated by underscores in the comment.

C. SUMMARY OF COMMENTS AND RESPONSES

PROJECT DESCRIPTION

Observation Deck

COMMENTS

"Page 10....The observation deck, for which they are requesting a 10,000 ft. bonus, is reached via the resident elevator. They'll have a security guard, and still they are claiming that that is a public benefit, public access, and they should be given a 10,000 sq. ft. bonus for that....I don't think that it is realistic to think that the general public would be allowed to go up in the elevator with quarter- to half-million dollar residents."

"Page 24 talks about the bonus for the observation deck. I think we ought to really look at that carefully. I mean, I think that the observation deck has to use the elevator for the office building, at the very least....If you are just somebody walking around wanting to go on a little highrise expedition up to the top of a building,...I don't think you will get up there to the observation deck." (Commissioner Bierman)

RESPONSE

The project sponsor has developed a new alternative, relocating the observation deck on the 20th floor with access via one of the office elevators. The following paragraphs are added after the first partial paragraph on p. 151 of the EIR:

G. ALTERNATIVE SEVEN: RELOCATED OBSERVATION DECK

This alternative would develop a 27-story combined office and residential building approximately 375 ft. tall. Alternative Seven would be similar to the project in bulk and design. The floor area calculations and requested bonuses under this alternative would be identical to those of the project as shown in Table 1 on p. 24. The only difference between Alternative Seven and the project would be the location of the observation deck and the numbering of the floors. As shown in Figure 12 on p. 22, the 19th floor of the project, containing mechanical equipment and the health club, would be a double-height floor. The 26-ft. ceiling height is necessary in that portion of the 19th Floor nearest Front St., to accommodate mechanical equipment. Under Alternative Seven, the project sponsor would construct a mezzanine level above the health club forming two floors nearest the prow of the building. The observation deck would be located on the 20th floor immediately above the health club. The residential portion of the building would remain the same under this alternative as shown in Figure 12 for the project except that the residential floors would be numbered 21 to 27.

IX. Summary of Comments and Responses

The observation deck would be accessible by one of the office elevators which would serve the 20th floor directly from the ground level; the remaining office elevators would stop at the 18th floor, the last floor of office use. The observation deck would be opened to the public during normal business hours.

The impacts of this alternative would generally be the same as those described in the Environmental Impacts section of this report (see Section IV, pp. 55 -117) for the project. The project sponsor is considering this alternative.

As shown in Table 1, on p. 24 of the EIR, the project sponsor would request a 10,000 sq. ft. floor area bonus for provision of an observation deck. The observation deck is intended as a public amenity, but would be provided to increase the amount of residential space which could be permitted on the project site. Paragraph one on p. 23 of the EIR notes that permitted bonus space would be limited to residential uses under the Interim Controls on high-rise office development. Allowing a floor area bonus for the provision of an observation deck would be permitted by the Interim Controls as found in Section 126(e)(1) of the City Planning Code (as amended by Ordinance 240-80) if the bonus is used to provide housing.

Renderings

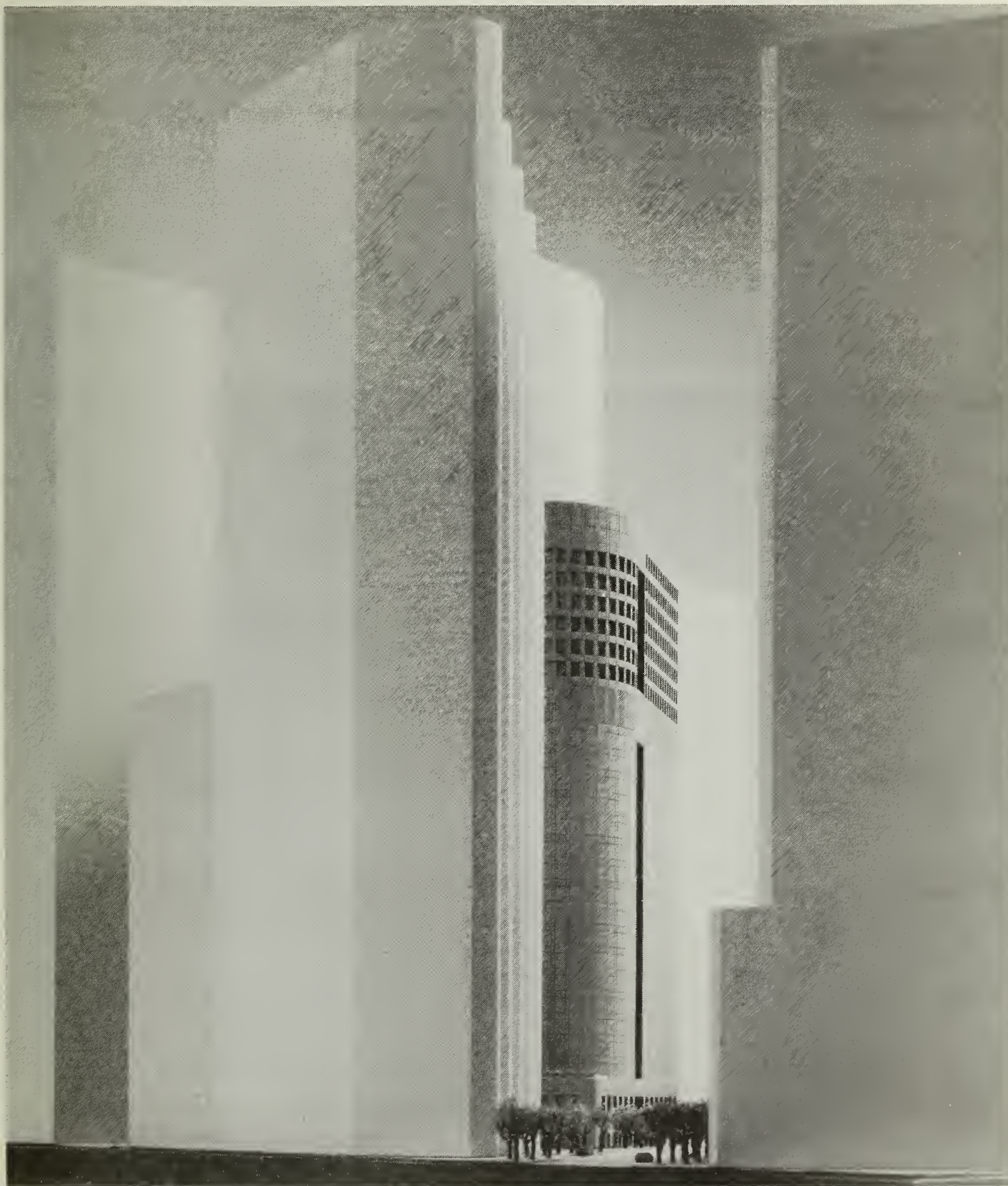
COMMENT

"Page 11, the rendering has a footnote, and when you then track the footnote, it says that the rendering isn't to scale....If that rendering has been drawn to make the building look slimmer or more graceful,...another drawing should be substituted for that, another rendering that would be more accurate as to the exact shape of the building and the size of the building. It references another photograph later on, and the photograph has a drawing superimposed of what the building will look like, and it does not look like that rendering. So I think that ought to be redrawn." (Commissioner Bierman)

RESPONSE

Since publication of the DEIR, a model of the proposed 388 Market Street Building has been completed. Photos of this model showing it in relation to surrounding buildings are presented on the next two pages and replace Figure 2 on p. 11 of the EIR. The photos of the model accurately depict the bulk and size of the proposed project in relation to surrounding buildings. The perspective of the photos is different from the perspective used in the rendering. The rendering in the DEIR was drawn to present the proposed building in the context of surrounding buildings without making it appear too far away from the observer.

Note /1/ on p. 26 of the DEIR references Figures 19 and 20 on pp. 62 - 63, which are photographs. These Figures have accurate perspectives with respect to existing buildings and street segments. The project outline is superimposed on these photographs to generally show the bulk and height of the proposed building. The superimpositions are two dimensional and have



▲
111 Pine St.

▲
444 Market St.

▲
PROJECT

▲
Mutual Benefit
Life

▲
One Metropolitan
Plaza Bldg.

● **FIGURE 2:** Photo of the Model Looking East on Market St.

SOURCE: Skidmore, Owings & Merrill



▲
333 Market St.

▲
444 Market St. PROJECT

▲
101 California St.

● FIGURE 2a: Photo of the Model Looking West on Market St.

SOURCE: Skidmore, Owings & Merrill

been approximately located by visual inspection. The building outline in Figure 20 on p. 63 appears wider than the building outline in the Figure 2 rendering in the DEIR because the observer is not located in the same place. The viewpoint in Figure 20 is located so that the Pine St. frontage of the building contributes more apparent bulk to the outline. Footnote /1/ on p. 26 of the EIR has been replaced with the following: "/1/ Photo of the 388 Market Street Building Context Model provided by Skidmore, Owings & Merrill."

On-Site Housing

COMMENTS

"Page 25, how large are the residential units? It doesn't have much of a description of their size. The figure quoted is \$225 to \$275 [thousand dollars] for prices. I wonder if that's really a realistic price or whether they'll be more than that."

"Page 8. I'd like to have the proposed sale prices of condos. Further on in the report it does give some sale prices as of 1981. And I would like that priced projected for 1984, for a completion date, by the cost of living index or whatever could be used to show the inflation rate." (Commissioner Bierman)

"I question the need for the construction of residential units in this part of downtown, in that the type of housing that's going to be built or proposed to be built, I don't think that -- it is clear today that there is no real need for this cost type of housing." (Commissioner Nakashima)

RESPONSE

The project would contain about 57 residential units; the units would vary in size as follows:

<u>Number of Units</u>	<u>Size (net sq. ft.)</u>
7	1,830
7	1,315
12	1,165
19	1,135
<u>12</u>	900
TOTAL 57	

Based on the above breakdown of unit sizes, the last sentence in paragraph two on p. 25 of the EIR is revised to read: "Residential units are expected to sell for about \$200 per sq. ft., or from about \$180,000 to \$366,000 in 1981 dollars./5/"

The average sales price of the residential units in the project would be about \$240,000 (1981 dollars). The precise size of the condominiums could change during the final project design.

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According to the project sponsor, \$200 per sq. ft. is an accurate estimate of the sales prices for the proposed residential units. Simple assumptions on future inflation rates could be applied to the condominium costs. For example, a six percent annual inflation rate between 1981 and 1984 would yield an average cost of about \$286,000 (1984 dollars) while a 12 percent annual inflation rate would yield an average cost of about \$337,000 (1984 dollars) for the proposed condominiums. Actual sales prices, however, would depend more on conditions in the housing market and current high interest rates, it is not possible to accurately project sales prices for the residential units into the future in 1984 dollars.

The proposal to develop a combined office and residential building on the site is based on the project sponsor's perceptions of evolving City policy. As noted on p. 165 of the Draft EIR and p. 248 of the Final EIR, "On April 9, 1981 Mayor Diane Feinstein submitted to the City Planning Commission an action program to encourage the development of new housing in the City. The Mayor's action program advocated mixed-use residential/office building development in the downtown and asked the Department of City Planning to create a set of permanent incentives to encourage housing by providing bonuses in floor area ratio and height in exchange for more housing." The Department of City Planning published a report in May 1981, entitled Guiding Downtown Development (updated in July, 1982), containing a series of regulatory proposals for managing development in downtown San Francisco. The proposed guidelines would encourage mixed-use developments by specifically allowing an additional FAR of 5:1 for residential use in buildings which contained the recommended base amount of commercial floor area.

The proposed condominiums would be too expensive for most households containing project workers (see response to Housing Affordability). Nonetheless, the project would increase the supply of housing in San Francisco, thus meeting some of the demand for housing in the City and reducing the demand pressure on other units. The sponsor would further reduce the housing impacts of the project, as stated in Mitigation Measure 2, p. 118 of the EIR, "...through off-site housing development or contributing to the City's low- and moderate-income mortgage investment pool."

BART Connection

COMMENT

"This project proposes to provide a direct connection to the mezzanine level of the Embarcadero Street BART Station from the lower basement level of the Building. BART staff supports the proposed direct building to station connection, and requests that the developer coordinate plans for this facility with us." (Howard Goode)

RESPONSE

Comment acknowledged. The following sentence is added to Mitigation Measure 9 on p. 120 of the EIR: "Prior to completion of final design drawings, the project architects would coordinate with BART and Muni staff for a direct connection between the proposed building and the Embarcadero Station."

LAND USE AND URBAN DESIGN

Projects Under Development in the Site Vicinity

COMMENTS

"Page 28...should include all sites listed in D4, Appendix D, p. 226 of the DEIR. It is a list of proposed projects. I think it [is] misleading. I think that there are more proposed projects than are shown on this map. Page 28 has a diagram and shows some development. Then when you turn to the Appendix, you find many, many more. I think they should all be on the map in the main body....The data in the appendix -- re: proposed, approved, and under construction -- needs to replace Figure 13 on p. 28."

"Page 29, the paragraph is misleading as it lists only a few of the proposed projects. 71 Stevenson and others are one and a half to two blocks away. I feel as though this should be in the body of the EIR." (Commissioner Bierman)"

RESPONSE

Figure 13 on p. 28 of the EIR shows the project site and vicinity. This Figure is intended to identify major existing structures and sites under development on the blocks immediately surrounding the site. Figure 13 shows all projects either proposed or under construction within the area covered on the map. If the Scale of Figure 13 were changed to show all proposed projects listed in the Appendix, it would no longer provide useful information with respect to the immediate site vicinity. Table D-5 and its accompanying Figure D-4 on pp. 225-226 of the DEIR have been replaced with a revised Table D-5 on p. 311 of the FEIR (see response to Cumulative Traffic, pp. 183-190. The list of projects considered in the DEIR has been updated.

Paragraph two on p. 29 of the EIR is intended to list projects that are either proposed, approved, or under construction within three blocks of the project site. A three-block limit was used to briefly describe the immediate land-use context of the area nearest the project site. Several projects within three blocks of the site were omitted from this paragraph; the first sentence of paragraph two on p. 29 is revised to add the following projects: "71 Stevenson, 562 Mission and 315 Howard." The last sentence of paragraph two is revised to read: "These developments, upon full build-out would provide about 7,760,000 sq. ft. of office space, 290,000 sq. ft. of retail floor space, 100,000 sq. ft. of residential floor area, and 1,025 parking spaces."

Bulk Measurements

COMMENT

"Page 67, No. 8. Is it fair to compare the length of the Hyatt Regency and No. 1 Market Plaza and the diameter of 101 California, the bulk, is it fair to compare that when the size of those lots probably differs from this project?" (Commissioner Bierman)

RESPONSE

The dimension of several buildings in the site vicinity were included in the EIR to show that the proposed building would be similar in scale to nearby development and that other structures, such as 101 California St., exceed the bulk requirements of Section 270 of the City Planning Code. The maximum street frontage for the 101 California St. site is 275 ft. and the tower of that building will have a diameter of 190 ft.; the maximum street frontage around the Hyatt Regency Hotel is 360 ft. and that building has a length of about 400 ft.; the maximum street frontage at One Market Plaza of 275 ft. is equal to the length of that building. The Market St. frontage of the proposed project is about 280 ft.; the building length and diagonal dimension above the second floor would be about 220 ft. The text of the EIR compares the bulk of existing buildings with that of the proposed building. Unlike the determination of Floor Area Ratio (FAR), calculations to determine whether building bulk conforms to the City Planning Code are not related to street frontage or lot area.

Visual

COMMENT

"Page 33. I think you ought to delete the sentence about 101 California construction being a visual attraction. It is that, but it is certainly not a long-time visual impact." (Commissioner Bierman)

RESPONSE

The referenced sentence is in the Environmental Setting section of the DEIR and is intended to describe a visual impact of the 101 California St. project. The last sentence of the first partial paragraph on p. 33 of the EIR is revised to read: "Upon completion, the circular design and large size of the 101 California St. building may be expected to provide visual interest from many locations in the project vicinity."

EMPLOYMENT, HOUSING AND FISCAL FACTORS

Displacement of Existing On-Site Tenants

COMMENTS

"Bunker Ramo Corporation has a lease at 320 Market Street, one of the buildings that must be demolished to make way for 388 Market Street....Bunker Ramo's lease with Honorway began on May 1, 1979 and does not end until June 30, 1984. There is no basis under the lease for early termination....And we have noted in the Environmental Impact Report the demolition of the buildings that's scheduled to begin as early as the end of 1982. So we are quite concerned about the construction and demolition time table that is set forth. I think that there is some environmental impact with respect to Bunker Ramo Corporation for these reasons....Bunker Ramo uses the space it leases...as an information systems satellite center. The space contains computer equipment...With this equipment, Bunker Ramo provides services to major national brokerage concerns...Bunker Ramo supplies information vital to the stock and bond trading carried on at all these locations. Without these services, there could be major disruptions in the brokerage business conducted in San Francisco."

Any early termination of the lease, which would be in violation of the lease, obviously, would have an impact upon the ability of NASD (National Association of Securities Dealers) and the brokerage offices in question to operate and, thus, on the ability of the San Francisco brokerage community to operate effectively.

"We have discussed the problems raised in this letter with Kwan So, president of Honorway Investment Corporation. He has advised officers of Bunker Ramo that the construction schedule set forth in the Environmental Impact Report is not a realistic one. We believe that, to be accurate, the Report should reflect the actual dates on which construction of the proposed project will begin....What we would hope to do is get some clarification of what that time table is going to be." (Warren E. George)

"I am President of Sally Walters, Inc., a lessee of office space on the second floor of 320 Market Street....Our lease with Honorway commenced on August 15, 1979, and does not end until August 14, 1984. There is no provision whatsoever in the lease for early termination.

"The Environmental Impact Report states, at page 2, that construction of 388 Market 'is expected to begin in late 1982...'...Obviously, the proposed construction schedule threatens a breach of our lease with Honorway Investment." (Sally Ann Walters)

RESPONSE

The first sentence of the third paragraph on p. 2 of the EIR is changed to read as follows: "Construction is expected to begin in early 1983 and to be completed in 20 months; initial project occupancy is scheduled for late 1984, with full occupancy expected during 1985." The first sentence of the first paragraph on p. 25 is changed to read: "Detailed project design

IX. Summary of Comments and Responses

is scheduled by the sponsor for completion in early 1983." The following phrase is added to footnote /5/ on p. 26: "...and personal communication, June 11, 1982."

The following tenants have leases at 320 Market St. that extend beyond the proposed early 1983 construction start date for 388 Market St.: American Shipping, Sally Walters, Bunker Ramo, and McClelland Engineers. These leases expire in March and June of 1984; all other tenants at 320 and 340 Market St. have leases that expire before early 1983 or have demolition clauses in their leases.

These leases represent about 13,600 sq. ft. of net rentable space of the 163,000 gross sq. ft. contained in the 320 and 340 Market St. buildings. The project sponsor is negotiating with the above tenants about terminating the unexpired portions of their leases. The intention of the sponsor is to arrive at mutually agreeable terms with these lessees. The project sponsor does not intend to abrogate any of the leases; if negotiations do not produce agreements with tenants, the project sponsor would postpone the construction commencement date until the leases have expired.

Cumulative Office Development

COMMENTS

"The table on pp. 214 and 215 of the DEIR (I've asked several times that you give the names of the projects so that I can understand what it is you are saying) totals up to the five million sq. ft. here, the three million sq. ft. there. And I started figuring out, I don't even know how you add up the numbers to get to 9.8 million....I don't know where the number, the total numbers come from....I would ask that those tables [pp. 214-217 of the DEIR] be amplified so that a person can verify the presumptions, like what projects are in them, and that they start adding in, at the bottom, references to redevelopment areas, which I don't think are included in there, and projects like the SP project, which are all over the papers, even though they don't have an EE number. I question 9.8 million, and I question it to a great extent based on the ambiguity of the material in this document." (Sue Hestor)

RESPONSE

Table C-1 on pp. 214-215 of the DEIR has been replaced with an updated table dated August 1, 1982 on pp. 297-298 of the FEIR. This table includes all buildings that were completed by the end of 1981 and appears on the following page. A complete list of projects under formal review, approved, and under construction (as of August 6, 1982) appear in the response to Cumulative Transportation, pp. 195-197. The last two lines on p. 36 and the continuation of that paragraph have been updated and replaced with the following:

San Francisco is the major office center in the Bay Area, with approximately 57.2 million gross sq. ft. of office space at the end of 1981./1/ Approximately 32.3 million gross sq. ft. of office space was constructed between 1960 and 1981 (based on Table C-1, p. 297).

IX. Summary of Comments and Responses

● TABLE C-1: MAJOR OFFICE BUILDING CONSTRUCTION IN SAN FRANCISCO THROUGH 1981, IN GROSS SQUARE FEET

<u>Year</u>	<u>Total Gross Sq. Ft. Completed</u>	<u>5-Year Total</u>	<u>5-Year Annual Average</u>	<u>Cumulative Total of All Office Buildings</u>	<u>Cumulative Total of All Downtown Office Buildings</u>
Pre-1960		(Net)(a)	(Net)(a)	28,145,000(b)	24,175,000(c)
1960	1,183,000				
1961	270,000				
1962	--				
1963	--				
1964	1,413,000				
		2,866,000	573,200		
1960-1964		(2,580,000)	(516,000)	30,725,000	26,754,000
1965	1,463,000				
1966	973,000				
1967	1,453,000				
1968	1,234,000				
1969	3,256,000				
		8,379,000	1,675,800		
1965-1969		(7,541,000)	(1,508,000)	38,266,000	34,295,000
1970	1,853,000				
1971	--				
1972	1,961,000				
1973	2,736,000				
1974	2,065,000				
		8,615,000	-1,723,000		
1970-1974		(7,753,000)	(1,550,000)	46,019,000	42,048,000
1975	536,000				
1976	2,429,000				
1977	2,660,000				
1978	--				
1979	2,532,000				
		8,157,000	1,631,400		
1975-1979		(7,341,000)	(1,468,000)	53,360,000	49,389,000
		<u>2-year Total</u>	<u>2-year Average</u>		
1980	1,284,000				
1981	3,029,000				
		4,313,000	2,156,500		
1980-81		(3,881,700)	(1,940,850)		
				57,241,700	53,270,700

● TABLE C-1: MAJOR OFFICE BUILDING CONSTRUCTION IN SAN FRANCISCO THROUGH 1981, IN GROSS SQUARE FEET (Continued)

- (a) Net equals 90% of gross. Net new space is added at an increase factor of 90%, since it is assumed that space equal to 10% of a new building is demolished to make land available for the new replacement building.
 - (b) Source: San Francisco Downtown Zoning Study, Working Paper No. 1, January 1966, Appendix Table 1, Part 1. For pre-1965, data include the area bounded by Vallejo, Franklin, Central Skyway, Bryant and Embarcadero. Also includes one-third of retail-office mixed use. For post-1964, data include the entire city.
 - (c) Gross Floor Space for downtown offices are included for the following functional areas: Financial, Retail, Hotel, Jackson Square, Golden Gateway, Civic Center, South of Market, and Outer Market Street as defined in the cited January 1966 report. For post-1964, the entire area east of Franklin Street is included.
-

SOURCE: Department of City Planning, August 1, 1982.

In the 1960's, the amount of office space constructed averaged about 1.1 million gross sq. ft. per year. During the 1970s office space was added at a rate of about 1.5 million gross sq. ft. per year. In the first two years of this decade (1980 and 1981) the average annual office space added was approximately 2.0 million gross sq. ft. An additional 7.8 million gross sq. ft. of office space will be added when buildings under construction (as of August 1982) are completed; another 5.4 million sq. ft. of office space has been approved but is not yet under construction; 4.2 million gross sq. ft. of office space has been proposed and is under formal review by the Department of City Planning. The amount of office space in the downtown area has increased steadily in the past two decades and will likely continue to increase in the next several years.

Footnote /1/ on p. 40 of the EIR has been updated to read "August, 1982" instead of "November 1981." The third paragraph on p. 76 of the EIR has been updated and replaced with the following:

The proposed project would provide about 234,500 gross sq. ft. of office space. The proposed project, together with other major downtown office buildings under construction, approved, and under formal review as of August 1982, would result in approximately 17.4 million gross sq. ft. of office space (see Appendix D, Table D-7). See footnote to Table D-7 for an explanation of what projects are included in the office space projection. About 1.3 million gross sq. ft. of existing office space has been or is

proposed to be demolished to clear the sites for these office developments. This results in a net addition of 16.1 million gross sq. ft. of new office space in Downtown San Francisco. For analysis purposes, the 16.1 million gross sq. ft. of net new space is used, for it refers to the amount of new construction in excess of existing space on each site in terms of gross sq. ft. of floor space. Historically, low vacancy rates together with rising rents suggested that the supply of new office space was less than demand. The increasing availability of downtown office space in the near future may result in a higher office vacancy rate and may lower the recent rapid increase in office rents. These market conditions would be beneficial for future lessees of office space.

Business Relocation from San Francisco

COMMENT

"Page 38, particularly No. 7 footnote....they are quoting the Bank of America about businesses leaving town. It's in a footnote. And if you are going to quote that kind of thing, I think you ought to quote the most recent conference called 'Who's Going to Turn out the Light When -- the Last One to Leave.' And that day, most of the people were very optimistic about people staying in town. Seemed to me that was an editorial comment and an unnecessary comment." (Commissioner Bierman)

RESPONSE

The comment refers to the discussion of the local and regional market for office space contained in pp. 36-38 of the EIR. Specifically, footnote /7/ references a newspaper article that appeared in the "San Francisco Examiner."

The first full paragraph on p. 38 describes the fact that some San Francisco firms may shift some support functions out of the downtown to suburban sites because office space rents in suburban locations are lower than in San Francisco. According to newspaper accounts of a seminar entitled "Will the Last Company Leaving San Francisco Please Turn Out the Light," speakers all agreed that the demand for office space in San Francisco is high. One speaker representing the Bank of America at the seminar stated, "...we'll put operations in the lowest cost place where we can do business, and if that's the suburbs, so be it." (San Francisco Progress, "Business Exodus Seminar Sets Different Tone," April 9, 1982).

Speakers at this conference did not contradict what is stated on p. 38 of the EIR. Footnote /7/ references estimates of tax costs per employee to office employers in Concord and San Francisco. The fact that tax costs to employers are lower in Concord than in San Francisco may also be a contributing factor influencing locational decisions by businesses. The EIR is not intended to provide editorial comment, but to describe existing conditions in the regional market for office space.

Housing Affordability

COMMENTS

"Page 81, second paragraph should state the availability of housing is not included in the analysis. It is mythical affordability. There is a statement in here...that everyone in the project could afford to live here. If not everyone, then the percentage that is supposed to get to live here, the 40 percent, can live here. And that's just got to be clarified. I don't know where they are going to find a place to live at what this report says, because I don't think it is available. If it were, we wouldn't be having...to do the housing mitigation. And I am afraid that statements like that will make our housing mitigation look like it isn't a necessary thing.

"Why do our reports presume 1.8 workers will have the same salary, these 1.8 that are going to be occupying the housing? If one is a woman and one is a man, which is often the case, historically the man makes more....So I don't know that our 1.8 is a very good figure. Too optimistic."
(Commissioner Bierman)

"Your text admits...that the jobs that are going to be created for San Francisco workers will mostly be workers moving into San Francisco. By definition, the 1980 census statistics on housing prices for those already in housing are irrelevant to those people, because there is a vast difference between those people...that bought a house 30 or 40 years ago and their monthly housing costs and someone moving into San Francisco from somewhere outside of the Bay Area buying a house. Their housing costs are going to be astronomically higher....The use, consistent use of housing figures based on census data for existing residents is warped if the jobs are not going to go to existing residents." (Sue Hestor)

"The 388 Market St. project uses the median rents for housing surveyed by the 1980 census and inflated for inflation in its calculations of housing affordability, although it notes a City Planning survey based on advertised vacant units shows much higher rent levels. This methodology is patently ridiculous -- in discussing new demand in housing,...clearly 'what the market will bear' is the only relevant number, and that is identified in the rents asked for vacant units. The census median rent amount is depressed by long-time residents whose rents are now rent-controlled as well as (as noted) inapplicable housing types such as residential hotels/subsidized housing which are not used by office employees. This section must be revised just to be honest." (Tony Kilroy)

RESPONSE

Analysis of environmental effects is limited by the California Environmental Quality Act (CEQA) to physical conditions; see Sections 21060.5 and 21151, as amended by Senate Bill 803. Housing affordability is a socio-economic issue, and therefore is not a necessary part of environmental analysis. The discussion on pp. 78 - 81 of the EIR addresses new employees' ability to afford housing, but it provides only a general understanding of the affordability issue.

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The assumption of 1.8 workers per household was used in the housing affordability analysis to be consistent with the housing requirement formula for new office developments being used by the Department of City Planning. The EIR has been revised to reflect housing affordability for a range of household incomes without assuming a specific number of workers per household. Table C-3 on page 217 of the DEIR has been replaced with the table appearing on pp. 170-172 and 300-302 of this document. This table and

TABLE C-3: HOUSING AFFORDABILITY BY HOUSEHOLD INCOME

Gross Annual Income Per Household or Per Individual	Maximum Affordable Monthly Housing Expenditure*	Housing Cost and Type of Unit			Source
		Monthly Cost**	Type of Unit	(Price)	
\$5,000	\$125				
8,300 (a)	208				
10,000	250				
10,680	267	\$267 -	Census Median Rent		(e1)
11,560	289	289 -	Median Rent, Studio Apartments		(f1)
15,000	375				
18,200	455	455 -	Median Rent, All Units		(f2)
20,000	500				
23,520	588	588 -	Median Rent, 3+ Bedroom Units		(f3)
25,000 (b)	625				
27,300 (c)	683				
30,000 (b)	750				
35,000	875				
40,000	1,000				
40,880	1,022	1,022 -	Lowest House Price (\$95,000)		(g1)
45,000	1,125	1,125 -	Census Median Value (104,600)		(e2)
50,000	1,250				
52,560	1,314				
55,000	1,375				
65,080	1,627	1,627 -	Median House Price (151,203)		(g2)
101,880	2,547	2,547 -	Highest House Price (236,750)		(g3)
300,000 (d)	7,500				

See following page for references.

TABLE C-3: HOUSING AFFORDABILITY BY HOUSEHOLD INCOME (continued)

-
- * The Office/Housing Production Program (OHPP) Interim Guidelines (January, 1982) define affordable housing as follows: rental expenses not exceeding 30% of gross monthly income, adjusted for family size; and home ownership expenses not exceeding 38% of gross monthly income, adjusted for family size, including mortgage payments, property taxes, insurance, and/or homeownership association dues. For the purpose of this table, 30% of gross monthly income is used to calculate housing affordability for both renters and owners. For owners it is assumed that 8% of gross monthly income would cover property taxes, insurance, and/or homeownership association dues and other related expenses. No adjustment has been made for family size because family circumstances vary widely.
- ** Monthly housing costs refer to rents and mortgage payments for the housing prices shown in parentheses; sources of rents and house prices are as footnoted. Monthly costs of ownership housing were calculated as monthly mortgage expenses assuming 20% down payment, 30-year mortgage, and 16% interest rate, not including insurance, property taxes, and other related housing costs.
- a. U.S. Bureau of Labor Statistics, March, 1981, "Area wage survey for the San Francisco-Oakland, California Metropolitan Area." \$8,300 was the mean 1980 income of inexperienced file clerks, one of the lowest-paid office occupations listed.
- b. The range of \$25,000 to \$30,000 is assumed to approximate the median annual income of project employees (see discussion of Income, p. 79).
- c. The \$27,300 income figure was derived by inflating the \$16,300 median income of downtown office workers from the 1974 SPUR survey through December, 1981 by 67% using U.S. Bureau of Labor Statistics national wage information for nonsupervisory finance, insurance, and real estate sector employees since 1974.
- d. Montgomery-Washington Building FEIR, 81.104E, certified January 28, 1982. The median salary of wage earners at 601 Montgomery St. was estimated to be \$52,560 and the highest salary for corporate officers \$300,000, according to a 1981 survey.
- e. City Planning and Information Services, "1980 Census Information," March 1982: 1. median rent 2. median noncondominium housing value
Rental data include residential hotels whose rent levels may be substantially lower than other types of rental dwellings and may therefore have an effect on the median rent.

TABLE C-3: HOUSING AFFORDABILITY BY HOUSEHOLD INCOME (continued)

- f. Department of City Planning, "Rent Survey," 1980. Median rents are for:
 1. studio apartments 2. all units 3. 3+ bedrooms
 These data are based on a small nonrandom sample of newspaper ads and may not reflect true rental costs.
- g. San Francisco Board of Realtors, "Multiple Sales Service," October 5, 1981. (Annual data on housing sales prices includes all homes listed by the Board of Realtors that were sold from February 11, 1981 to October 1, 1981 in San Francisco):
- | | | |
|-----------------|-----------------|------------------|
| 1. lowest price | 2. median price | 3. highest price |
|-----------------|-----------------|------------------|

SOURCE: Environmental Science Associates, Inc.

corresponding analysis does not make any assumptions regarding the relative incomes of workers in a household. The second, third and fourth sentences of the first full paragraph on p. 81 of the DEIR have been replaced with the following:

Table C-3 illustrates the housing affordable to individuals and households with a wide range of incomes, assuming 30% of gross household income is spent for housing. Assuming a 20% down payment, 30-year mortgages, and a 16% interest rate, Table C-3 illustrates that most project employees would not be able to afford ownership housing in San Francisco, although, depending on the number of workers per household, as many as one-third would probably be able to do so. Most project employees, except the lowest-paid clerical workers desiring to live alone, would probably be able to afford rental housing in San Francisco.

As stated in the second full paragraph on p. 81 of the EIR, "Housing affordability is determined not only by household income and price of housing, but also by equity in existing real estate, savings, debt, access to credit, interest rates, number of dependents, number of wage earners, tastes and preferences." Each of these factors would influence each household formed as a result of the project in different ways. For example, residential hotels may be relatively inexpensive and available, but a downtown office worker would probably not choose to live in one. Conclusive statements regarding housing affordability for projected employees are not possible. What can be stated are generalizations that seem most plausible.

U.S. Census data and other sources of information on the costs of purchase and rental housing are included for informational purposes. The EIR does not imply that census median house values and median rents would be available to project employees. Census medians indicate that the range of prices would be above and below these figures. Complete information

concerning the range of rents and house values is not presently available from the Census. Other sources have been included in the analysis to illustrate the range of prices currently exhibited in the market.

As evidenced by newspaper rent surveys, the costs of newly available units are generally higher than the costs paid by existing households. Data from newspaper rent surveys, as discussed on p. 80 of the EIR, are not statistically valid because the sample is small and nonrandom. A housing affordability analysis based solely on newspaper rent surveys would be misleading.

Regional Housing Demand

COMMENTS

"I would ask with regard to the housing analysis,...p. 76 and again in the tables,...from p. 214 of the DEIR,...that you take an honest look at the regional housing demand. I know you are getting complaints that this is not an environmental argument from developers; however, I think you have the obligation to say, can Alameda supply the housing that is programmed to be in Alameda; Contra Costa; Marin, similarly; South Bay, similarly? Because,...if those [Bay Area] counties don't have the ability to provide affordable housing at the level that the workers are going to be demanding it, you're going to have massive regional traffic and transit impacts. I think that EIR's have got to tell you where people will find housing and what are the environmental implications of that at the most basic level for air pollution, transit demand and roadway demand....Is the region able to supply the housing at the affordable level that the workers can meet?" (Sue Hestor)

"While [Table C-2]...consider[s] the cumulative demand of San Francisco office development on the housing supply of the various counties, obviously in assessing the impact of that demand on the regional housing shortage the creation of City and regional housing demand by other economic development is an essential factor in the equation -- but it is omitted....In various recent ABAG studies such projections are available. Also, available sources for this information can be found in DEIRs for major development projects in other counties (e.g., Century Office Park in South San Francisco and TransPacific Office Center in Oakland), as well as in the respective Citizens' Housing Task Force reports pursuant to AB 2853 prepared by all counties. Adding an additional column to the table identifying the 'Other Cumulative Housing Demand' will make clear both whether an overall regional housing demand/supply imbalance exists, which most concede is the case, how serious it is in order of magnitude, and what general fraction of it results from San Francisco office development."

"Given the nature of the proposed housing impact mitigations, the OHPP,...each project EIR [must include] in the Employment and Housing Effects section of Unavoidable Impacts Section: 1) a clear admission that the proposed mitigation will not provide any relief for the project's net housing demand in Bay area counties other than San Francisco, and in fact will exacerbate the regional housing shortage." (Tony Kilroy)

RESPONSE

Section 15012 (b) of the California Environmental Quality Act (CEQA) Guidelines states, "Economic information may be included in an EIR or may be presented in whatever form the Agency desires." Information on the regional housing market is provided in the EIR to comply with the standards accepted by the City and County of San Francisco. A complete description of socioeconomic impacts is not required by CEQA.

Estimates of regional housing demand attributable to cumulative San Francisco office development on pp. 77-78 of the EIR and in Appendix Table C-2 on p. 299 have been revised to reflect the updated list of cumulative office development (as of August 1982). The revised Table C-2 appears on the following page of this document. The fourth and fifth sentences on p. 77 of the EIR are replaced with the following: "Between 1982 and 1990, the projected cumulative San Francisco housing demand resulting from downtown office development (based on projects currently under construction, approved and under formal review) will be about 6,900 to 14,300 units (see Appendix C, Table C-2, p. 299). This demand could exceed the 12,000 unit supply projected by ABAG to be achieved between 1982 and 1990." The first sentence on the first full paragraph on p. 78 of the EIR is replaced with the following: "The net amount of housing demand in San Francisco created by the proposed project would be about 0.3 percent to 0.7 percent of the City's projected housing growth from 1982 to 1990 (see Appendix C, Table C-2, p. 299)." The revised Table C-2 illustrates that housing demand attributable to the project would comprise about 0.1 percent of projected housing stock growth between 1982 and 1990 in Bay Area counties if it were assumed that all jobs created by the proposed project would contribute to the generation of new households in the Bay Area, a worst-case assumption. Due to current depression in the housing industry, projections of housing stock growth in the Bay Area may be high. Nevertheless, the project would still result in the demand for a low percentage of regional housing stock growth.

The EIR does not contain an analysis of housing affordability outside of San Francisco. Since housing prices are generally higher in San Francisco than other Bay Area counties, the analysis of affordability in San Francisco could also be applicable as a worst-case analysis to the region (see response to "Housing Affordability" for an analysis of housing affordability in San Francisco). While housing costs may be lower outside of the City, households' ability to pay for housing may also be lower because a higher proportion of a suburban household's income would be spent on commuting expenses than would a typical San Francisco household's.

The Memorandum "Office/Housing Production Program (OHPP) Interim Guidelines," January 1982, used to estimate housing demand, is applicable only in San Francisco. It has no adopted basis in any of the surrounding counties. The City Planning Commission does not have the legal authority to impose mitigation measures to be implemented outside its jurisdiction.

TABLE C-2: PROJECTED EFFECTS OF DOWNTOWN OFFICE DEVELOPMENT ON REGIONAL HOUSING MARKETS, 1982-90

	Net Project Demand in 1985		Gross Cumulative Demand 1982 to 1990(c)		Net Housing Stock Growth 1982-1990(d)		Demand as a Percent of Growth, 1982 to 1990	
	No. Households	No. Emp.	No. Households	No. Emp.	No. Units	No. Units	Project	Cumulative
San Francisco (a)	40 to 85	9,700 to 25,800	6,900 to 14,300		12,000		0.3 to 0.7	57.5 to 119.2
Peninsula (b) (San Mateo and Santa Clara Counties)	50	11,600	8,900		87,600		0.1	10.2
East Bay (b) (Alameda and Contra Costa Counties)	90	19,300	14,900		111,800		0.1	13.3
North Bay (b) (Marin and Sonoma Counties)	35	7,700	5,900		36,800		0.1	16.0
TOTAL	215 to 260	48,300 to 64,400	36,600 to 44,000		248,200		0.1	14.7 to 17.7

(a) The range of San Francisco employees and households is based on 101 Montgomery Street Final EIR, EE 80.26, Certified May 7, 1981 (15-30% of all employees would reside in San Francisco and 1.4 workers would occupy each household) and "Office Housing Production Program (OHPP) Interim Guidelines," Department of City Planning, January 22, 1982 (40% of all employees would reside in San Francisco and 1.8 workers would occupy each household).

(b) Distribution of employees is based on weighted average of expected employees in Federal Reserve Bank (EE 78.207), 101 California Street (EE 78.27), Pacific Gateway, (EE 78.61), and Crocker National Bank (EE 78.298), from 456 Montgomery Street Final EIR (EE 78.178) p. 167 (18% in the Peninsula, 30% in the East Bay, and 12% in the North Bay). Number of workers per household in these counties is assumed to be 1.3 based on 1980 Census data.

(c) Total office space considered in this analysis is about 16.1 million sq. ft. of net new office space (see Appendix D, Tables D-6 and D-7). The proposed Housing Element (May 1982) estimates San Francisco housing needs from 1980-85 in Table 21A. This estimate, based on the Citizen's Housing Task Force Report, July 21, 1982, shows a need for about 16,000 to 19,000 units. The "needs" estimate uses a similar office development basis, but also includes housing demand generated by other sources in addition to office development and covers the years 1980-85.

(d) Net housing stock growth is based on "Projections 79," Association of Bay Area Governments, January 1980. Projections contained in this document for 1980-1990 were prorated to reflect 1982-1990 net housing stock growth.

SOURCE: Environmental Science Associates, Inc.

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The "Report of the Citizen's Housing Task Force" (San Francisco, July 29, 1981) projects a need for 30,000 dwelling units in San Francisco between 1980 and 1989. This projection was made using a similar office development basis as considered in the cumulative housing analysis in this report, and also included housing demand resulting from demographic trends independent of office development. ABAG's "Counties Needs Analysis" discusses housing "needs", which is actually a supply prediction or capacity analysis rather than a demand projection. Individual EIRs may indicate new housing demand attributable to a particular new office development, but it would not be possible by this means to provide comprehensive breakdown of regional housing demand by office development and other types of development. New household formation in the Bay Area will result not only from economic development but also from immigration, children reaching maturity and other factors.

Additional information on the rental housing market is provided in the following response.

Rental Housing

COMMENTS

"From the various discussions on affordability, one can certainly infer that most of the net new housing demand generated by each project within San Francisco will be in the City's rental market, as will be a substantial portion of the demand in the other Bay counties. The information presented should permit this split [rental vs. ownership] to be estimated both as a percentage and in actual housing units. This is very important.

"Available information should permit the estimates of new housing supply ('Net Housing Stock Growth') to similarly be divided between rental and ownership housing...Table C-2 in the 388 Market...DEIR should be modified to show these

amounts with two sub-columns under both 'Cumulative Demand-No. Households' and 'Net Housing Stock Growth-No. Units'...Then the 'Project Demand as a % of Growth' column in...[the] table should also have two sub-columns for rental and ownership housing. What one can expect to see is a far higher percentage impact in the rental column than the ownership column, and this is vital information for the Planning Commission's project mitigation review, and for the formulation of related public policy such as the revision of the Housing Element of the City's Master Plan."

"Given the nature of the proposed housing impact mitigations, the OHPP,...each project EIR [must include] in the Employment and Housing Effects section of Unavoidable Impacts Section:...an admission that, due to various forms of mitigation of the City's 'OHPP' program, the project will not provide full mitigation of the project's net rental housing demand and associated lower-income household displacement impacts in San Francisco as well as other Bay Area counties." (Tony Kilroy)

RESPONSE

Given current housing market conditions in the Bay Area, characterized by demand which outstrips supply; inflation, resulting in high housing prices for existing and new housing units; and high interest rates, the number of persons able to purchase a home is limited, and the portion of housing demand placed on the rental market is increased.

The Association of Bay Area Governments (ABAG), "San Francisco Bay Area Housing Activity Report No. 3," May 1981, provides information on housing permits for Bay Area counties from 1978 through 1980. The report gives the number of permits issued by housing type (single-family, multi-family rental, multi-family condominium) and the total number of units which would be constructed if all the permits were acted upon, but does not disaggregate the units by housing type.

Very little new rental housing is being constructed because competitive market-rate rents that can be charged do not provide adequate return on investment. According to the "Report of the Citizen's Housing Task Force" (July 29, 1981), rent levels in San Francisco have not kept pace with the cost of apartment construction. However, an unknown quantity of purchase housing does find its way into the rental market. According to the Department of City Planning report "Condominium Research Preliminary Progress Report" (December 1981), 41 percent of condominium purchasers (of condominiums that received tentative and final map approval since January 1, 1979) have claimed a homeowner's tax exemption, indicating "that the majority of condominiums have been sold to investors, buyers of second homes, or homeowners neglecting to file exemption forms." Condominiums are the most common type of new housing construction, but the same underuse of the homeowner's tax exemption is likely to be true for other types of purchase housing. A breakdown of new housing construction into rental and purchase categories would not necessarily provide an accurate picture of the actual quantity of rental housing available.

No model is known to the EIR authors that would allow the housing choices of new office workers to be reliably quantified. By making certain assumptions, however, the split between project-generated housing demand in the for-sale and rental housing markets can be estimated.

The table on p. 26 illustrates existing residential patterns according to 1980 U.S. Census Data.

Assuming that project-generated households would follow the existing split between owner- and renter-occupied housing, such a projection can be made. This assumption implies a corollary assumption that project-generated households would have an income distribution and encounter housing costs similar to existing residents in the region. Since the ownership/rental housing split in San Francisco was 33% to 67% in 1970 and 34% to 66% in 1980, the assumption that project-generated households would follow the existing ownership/rental housing pattern seems valid.

TABLE A: OCCUPIED UNITS (Based on 1980 Census Data)

	<u>Owner</u>	<u>Percentage</u>	<u>Renter</u>	<u>Percentage</u>
San Francisco	100,786	34%	198,170	66%
San Mateo	134,341	60%	90,860	40%
Santa Clara	273,561	60%	184,958	40%
Peninsula Total	407,902	60%	275,818	40%
Alameda	226,137	53%	199,955	47%
Contra Costa	164,860	68%	76,674	32%
East Bay Total	390,997	59%	276,629	41%
Marin	53,196	60%	35,527	40%
Sonoma	72,728	64%	41,746	36%
North Bay Total	125,924	62%	77,273	38%

SOURCE: Association of Bay Area Governments (ABAG)

Using the percentages from the above table, assuming that the split between owner- and renter-occupied housing in the 1980 U.S. Census would be the same for project workers, new households generated by the project would be distributed approximately as shown in Table B (see Table C-2, p. 175, for derivation of number of households).

TABLE B: DISTRIBUTION OF PROJECT-GENERATED HOUSEHOLDS

	<u>Owner(Units)</u>	<u>Rental(Units)</u>	<u>Total(Units)</u>
San Francisco	14 to 29	26 to 56	40 to 85
Peninsula	30	20	50
East Bay	53	37	90
North Bay	<u>22</u>	<u>13</u>	<u>35</u>
TOTAL HOUSEHOLDS	119 to 134	96 to 126	215 to 260

While the project sponsor would meet a portion of the OHPP housing policy by developing on-site housing, the manner in which the remainder of the housing requirement would be met, if the project were approved, has not been determined. It is possible, therefore, that housing constructed in San Francisco to satisfy conditions imposed by the City Planning Commission would enter the rental market. Thus, the project-related

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rental-housing demand/supply relationship cannot be quantified. The housing requirement that has been placed on new office developments in San Francisco constitutes mitigation of project-related housing demand in the City; displacement of low-income households would not necessarily be an effect of the project. (See the following response for a discussion of displacement.) The implementation of housing mitigation is an issue that involves City policy and must be resolved by the Planning Commission when it considers approval of the project.

Housing Displacement

COMMENT

"While the previous EIRs for Five Fremont Center and 101 Montgomery which are referenced...do include a discussion of the issue of displacement of lower-income households due to the housing demand/supply imbalance, this issue is of such critical magnitude that it should be discussed in detail...above and beyond such references. Is there really something more important than people losing their homes to economic competition engendered by these projects' net housing demand?

"Given the information on the project's individual and all project cumulative impacts on the rental segment of the housing markets,...since this is the segment where most all of the displacement impacts can be expected to occur, the rather blunt conclusion that if x units of rental demand are generated in the various counties compared to the respective new rental housing supply, y , there will be a shortfall or surplus of $y-x$. It is a fair conclusion that the free market will either assign available units in normal turnover to those households that can afford what the market will bear, requiring at least very-low income households to move to other areas of the region, state, or nation, or to double-up and overcrowd housing." (Tony Kilroy)

RESPONSE

According to the State CEQA Guidelines (California Administrative Code Title 14), Section 15149, "An EIR may incorporate by reference all portions of another document which is a matter of public record or is generally available to the public. Where an EIR uses incorporation by reference, the incorporated part ... shall be briefly summarized where possible or briefly described if the data or information cannot be summarized." Section 15016(s) encourages public agencies to reduce paperwork by, among other things, "using incorporation by reference." The practice is intended to streamline the environmental review process, not to diminish the importance of issues.

It is not clear that downtown office development is displacing low-income households in the City. It is true that downtown developments are attracting more workers to San Francisco and some of these workers are choosing to live in the City. However, while office space in San Francisco increased by over 14 million gross sq. ft. between 1970 and 1980, the number of San Francisco residents actually declined. Obviously, many factors besides the growth of office space affect the housing market. The current slowdown in new housing construction is a national

problem resulting from a wide variety of economic factors, including high construction costs and mortgage interest rates. The demand for housing in San Francisco may be partly attributable to immigration that is independent of downtown office development.

A recent study of displacement in San Francisco found no causal inference between office development and displacement of low-income households. Based on a review of available displacement information, the study, "Displacement in San Francisco" (Berkeley Planning Associates, September 2, 1980) concluded, "None of these sources documents definitely whether, where or how displacement is taking place." (Underscore from source). The study noted various factors which imply displacement is taking place in certain neighborhoods, including the fact that rents are rising faster than incomes, condominiums and residential hotels are being converted, and levels of reinvestment are increasing in certain neighborhoods. The study concluded that displacement, "...narrowly defined as the forced relocation of a household by circumstances beyond its control, is occurring in San Francisco,...in a general sense." The study attributed increased demand pressure in the rental housing market as a primary factor influencing displacement.

The study also included detailed information concerning the Hayes Valley neighborhood in San Francisco, based on research sponsored by the U.S. Department of Housing and Urban Development (HUD) as part of a national study of neighborhood revitalization. Displacees, based on survey data, were mostly neutral or fairly satisfied with their new housing. Average annual rent increases for displacees was "less than those of other mobility groups." One of the most significant aspects of displacement in the Hayes Valley is the rapidly changing demographic profile: over 61% of the displacees are black, while people moving into the neighborhood "include significantly larger percentages of white, more educated, higher income households." The study did not conclude that downtown office development was a cause of displacement in the Hayes Valley.

According to "Clearinghouse Review" (National Clearinghouse for Legal Services, July 1981):

"Hypotheses about the cause of displacement include: (a) the general deterioration in the U.S. economy, which leads consumers to place a premium on lower cost housing; (b) escalating costs of new suburban construction as a result of rising land costs, growth controls, environmental regulation, rising materials and labor costs; (c) a new anti-suburban ideology among children of the suburbs; (d) a priority on residences close to work centers because of uncertainties about the availability and price of gasoline; (e) demographic changes: more singles and childless families whose locational preferences are not tied to the location of good (suburban) schools; and (f) increasing appreciation of the architectural qualities of older housing."

Based on the above review of available information, it seems plausible that many factors are influencing the displacement of low-income households. The housing demand generated by the project may indirectly affect displacement in San Francisco, although housing market experts do

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not conclusively agree that office developments cause displacement. Because none of the studies of displacement found office development to be a cause of displacement, the displacement impacts due to this project would probably be very small. Quantification of displacement effects is not possible because measurement techniques have not been developed. These possible impacts have been mitigated to a certain extent by City policies including the Residential Hotel Conversion Ordinance (330-81), the Rent Stabilization Ordinance (276-79), and the Condominium Conversion Ordinance (337-79).

TRANSPORTATION

Transit

COMMENTS

"Project's impact on mass transit...should be included." (Paul H. Hughes)

"Page 93 and 94. I don't think that those pages indicate what effect increased transit need and use will have...on neighborhoods they have to pass through. For instance, the Richmond, the Marina, Geary Corridor. How close the headways will have to be, particularly the Golden Gate bus routes in San Francisco and also on the Golden Gate Bridge....These reports are relying and our approvals are relying on increased Muni service. And I am afraid that the neighborhoods are really going to suffer because of it."
(Commissioner Bierman)

"We support the project sponsor's intentions to encourage tenant firms to implement flex-time for employees as well as seek a transportation broker to encourage transit use through the sale of on-site BART tickets." (Howard Goode)

RESPONSE

An analysis of the project's impact on regional transit systems is contained on pp. 91-94 of the EIR and updated under the response to "Cumulative Traffic", on pp. 31-55 of this document. The required overall capacity increase in downtown Muni service, anticipated in Muni's 5-year plan to be about 25 percent between 1981 and 1986, would be met, in part, by reduced headways. Twenty-two new light rail vehicles (LRV) are on order and 50-100 articulated buses are scheduled to be ordered this fall. Headways on the LRV lines would, therefore, be reduced because of the greater number of vehicles in service on the lines. The new articulated buses would carry 50 percent greater passenger loads without any change in headways because the capacity of the new buses is about 50 percent greater. Buses displaced from radial routes by the new vehicles could then be used on other routes; one element of Muni's 5 year plan would increase crosstown service through the neighborhoods, stimulating demand on radial routes inbound to and outbound from the downtown area. Exact information on which neighborhoods might be affected is not contained in the Muni plan. In general, if capacity on radial routes were to be increased by 25 percent, solely by reducing headways, the average headway between vehicles would be reduced by 20 percent. For example, a line now

having six minute headways would have headways reduced to about 4.8 minutes. The project would provide 57 condominiums and would reduce potential peak transit impacts to the extent that downtown workers who would live on the site would not drive or use transit to commute to work.

Golden Gate Transit currently operates about 110 buses across the Golden Gate Bridge per hour during morning and afternoon commute hours with average headways (crossing the Bridge) of about 33 seconds. During each commute period, 242 buses are in use. The District plans to purchase 70 new buses in the next five years. Headways would therefore be reduced to 29 seconds from 33 seconds over the Golden Gate Bridge. (Allen Zahradnik, Senior Planner, telephone communication, June 15, 1982.)

Travel Demand

COMMENT

"Page 90, I don't know what 'net project' and 'gross project' means."
(Commissioner Bierman)

RESPONSE

The term "gross project" (i.e., gross number of project trips) refers to the number of trips associated with the project. Gross project trips are calculated according to estimates of daily person trips by type of floor area (see note /1/, p. 99 of the EIR). Net project trips are calculated by subtracting existing person trips currently generated on-site from the number of person trips projected for the project. The project site now has about 124,000 sq. ft. of office space and about 19,000 sq. ft. of retail space in use. As stated in the second paragraph on p. 89, "the proposed project would generate approximately 1,000 gross person trips during the p.m. peak hour (about 900 office, 65 retail and 40 residential). Because existing office and retail uses on the site generated an estimated 580 peak-hour person trips, the net number of peak-hour project trips would be about 425."

Vehicular Traffic

COMMENTS

"The location of loading docks and parking ingress/egress on Front Street will create pedestrian and vehicular traffic jams of monumental proportions. The block of Front Street between Pine and Market is a short block and, as noted in the EIR, queuing for left turns onto Pine Street often extends most of the west side of the block. To add queuing for ingress/egress and loading/unloading for 388 Market on the east side of the block will effectively close Front Street many times a day." (Janet Cochran)

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RESPONSE

Existing queueing on the left side of Front St., for turns onto Pine St., is discussed in paragraph three on p. 45 of the EIR. The following is added after the sixth sentence of the third paragraph on p. 45 of the EIR: "The left curb lane in the approach of Front St. to Pine St. is the left-turn lane, and there are two through-only lanes." The effect of the traffic from the project on conditions in the left turn lane on Front St. is discussed on pp. 95 and 96. Cars entering the parking garage would be able to use the curb lane and would not ordinarily block the through lanes. It is unlikely that the left-turn lane would be blocked by vehicles entering or leaving the project. The right (through) lane would be blocked momentarily during maneuvers into or out of the project's garage ramp or off-street loading dock area, and could be illegally blocked by double parking. This latter prospect would not be an expected effect of the project, which would add two new off-street loading docks to serve the new office space. Project-related use of the right lane, such as by trucks backing into the off-street loading spaces, would increase queueing in the left lane. There would be an average of about 6 to 8 truck or service vehicle stops during the p.m. peak hour, of which about half would back into the loading dock area. An alternative that would involve locating the project's garage ramp and loading area on Pine St. is discussed on pp. 147-150 of the EIR. Under this alternative, Front St. traffic operating conditions (level of service) would then not be affected by the building.

The words "parking garage" have been deleted from Mitigation Measure 19 on p. 121 of the EIR and the following sentence has been added: "A 'scramble,' or exclusive-pedestrian phase could be employed there. The left of the two through lanes in the northbound approach of Front St. to Pine St. could be designated a left/through lane, to reduce the awkwardness of maneuvers out of the project garage onto Pine St."

Cumulative Traffic

COMMENT

"The project-related traffic will add to the already existing congestion on freeways approaching and within San Francisco during a.m. and p.m. peak-commute hours....The DEIR does not provide sufficient information concerning proposed-project's impact on the study-area's streets and freeway ramps. This information must be provided, and should include analysis for freeway ramps/local street intersections traffic calculations and flow diagrams and Levels of Service. Measures to mitigate the adverse impacts should be discussed." (Paul H. Hughes)

RESPONSE

The paragraphs below describe changes which have been made in the EIR text to reflect an updated list of cumulative office development dated August 6, 1982. A summary of service levels at intersections in the area and at the foot of freeway ramps has been added (pp. 94-95 of the EIR text

contain these changes). Flow diagrams of existing and projected traffic have been placed on file in the Office of Environmental Review. A proposed mitigation measure on the list of 'measures that would be implemented by public agencies' has been extended (see response to "Vehicular Traffic").

The following replaces pp. 89-94 of the Draft EIR as pp. 88-92 of the Final EIR:

PROJECTED TRAVEL DEMAND

The transportation analysis covers the time period of 4:30 - 5:30 p.m. for peak-hour effects of project and cumulative development on transportation systems serving the downtown area. The p.m. peak hour is used because the capacity relative to demand is less than during the a.m. peak and the effect on congestion of additional demand created by projects proposed and under construction in the City would be highest.

The proposed project would generate approximately 750 person trips during the p.m. peak hour (about 655 office, 55 retail and 40 residential). Because existing office and retail uses on the site generate an estimated 530 peak-hour person trips, the net number of new peak-hour project trips would be about 220./1/ Table 7 shows the projected travel demand by travel mode. Trip assignments are based on the modal splits recommended by the Office of Environmental Review./2/

Almost four percent of the floor area proposed in new downtown development is residential. As a result, travel demand generated by retail and office space would probably be reduced since some related commute trips would be intra-City.

A total of 17.4 million gross square feet of new office space is proposed, approved or under construction in the City. Tables D-6 and D-7, in Appendix D, show the projects included in the cumulative analysis. Approximately 1.3 million gross square feet of existing office space would be replaced by the proposed development, resulting in about 16.1 million gross square feet of net new office space. This growth, and the 0.5 million gross sq. ft. of net new retail construction, would generate approximately 48,000 person trip ends during the weekday p.m. peak hour.

Hotel projects have not been included in the cumulative analyses because hotel uses have different peaking characteristics from office buildings and generally do not significantly affect peak-hour traffic or transit. Residential projects have not been included because residential travel in the downtown is generally in the contra-commute direction during peak-hours and because the office trip generation rate and modal split distribution are predicated on the assumption that housing would be available in the City. Thus inclusion of residential projects would be double counting of project generated travel.

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In this and other San Francisco EIRs, a land-use type of approach has been used to estimate employment and the resultant transportation impacts of both the proposed project and cumulative development. An alternate type of approach is to forecast travel demand based upon regional projections of employment share (employment trend approach)./3/ Appendix D contains a discussion of the differences between the two approaches. (See pp. 201-205.)

Peak-hour travel by mode for the project and other office developments in the greater downtown area is shown in Table 7. The modal assignments have been made assuming existing travel patterns and do not attempt to predict any modal shift (see Appendix D for further discussion). As the bridge and freeway system serving the City is currently near capacity during peak hours, and as parking availability is limited, the present population of persons traveling by single-occupant auto might be expected to change in the future. Much of the City-wide peak-hour increase might be expected to be accommodated by a shift from single-occupant automobile to ridersharing or public transit.

TABLE 7: PROJECTED* PEAK-HOUR PERSON-TRIPS BY TRAVEL MODE

Modal Type	Projects** Under Construction	Approved Projects**	Projects Under Formal Review**	388 Market Project	Total
Automobile	6,980	4,600	3,570	80	15,230
Muni	5,480	3,620	2,820	80	12,000
BART	3,700	2,440	1,910	40	8,090
A/C	1,720	1,120	860	20	3,720
SamTrans	250	170	130	-	550
SPRR	940	620	480	10	2,050
GGT	820	540	420	10	1,790
Ferry	180	110	90	-	380
Other	<u>1,480</u>	<u>1,220</u>	<u>1,510</u>	<u>20</u>	<u>4,190</u>
	21,550	14,440	11,790	220	48,000

* Projections based upon distribution shown in Table D-2, Appendix D, p. 308.

** Individual projects are listed in Table D-6, Appendix D. The 388 Market St. project has been separated here from the projects under formal review totals.

TRANSIT

Estimated transit ridership in relation to capacity is shown in Table D-9 in Appendix D.

The 39 Muni lines with stops within 2,000 ft. of the project site would carry about 37,800 outbound p.m. peak hour trips with the addition of demands from the 16.1 million gross sq. ft. of net new office development and 0.5 million gross sq. ft. of net new retail space./4/ The project would generate approximately 80 new p.m. peak hour Muni trips. Project-generated Muni riders would be about 0.7 percent of the 16.1 million gross sq. ft. of cumulative development.

Due to restrictions on automobile use which could result in a transportation mode-shift, new Muni patronage attributable to the project may potentially exceed the estimated 80 p.m. peak hour person trips shown on Table 7.

The addition of the projected cumulative development ridership (12,000 p.m. peak-hour) would cause most of the affected Muni lines to operate over capacity if no additional capacity is added. (This would also be the case for the BART transbay, Southern Pacific and SamTrans.) As the cumulative demand increases, the length of time of peak loadings will increase, spreading peak-of-the-peak conditions over time. As some lines only operate during heavy demand periods (for example, express service for one to two hours during peak periods), there may not be additional capacity available to allow spreading over time without adding more runs. (Additional runs may not require increases in vehicle fleet size as the additional runs would be extending the peak period level of service over a longer period of time. Additional runs would cause increases in operating and maintenance costs.)

Assuming that existing funding continues and proposed expansion occurs, the future load factors on the transit agencies would be as shown in Table D-8 in Appendix D, p 202 and 320.

Other Transit

BART is projecting a peak hour capacity of 16,500 seats transbay (eastbound) and 11,000 seats westbay (westbound). Recommended maximum capacity would be 24,750 and 16,500 respectively. Average loadings including ridership from the projected 16.1 million gross sq. ft. of net new cumulative development would not be over capacity with the anticipated capacity. AC Transit does not have any increases proposed for its transbay service and would therefore be operating at 99 percent of its recommended maximum capacity with the cumulative demand. SamTrans is proposing to have a capacity of between 4,800 and 5,000 seats per hour on its San Francisco routes. Recommended maximum capacity would be 6,250 riders. Average future loadings on SamTrans would be under seated capacity when the anticipated capacity becomes available. Southern Pacific/CalTrans does not have any proposals to increase seated capacity; however, station improvements including additional parking are proposed. Southern Pacific would therefore operate in excess of its recommended maximum capacity with the cumulative demand. Golden Gate Transit is proposing to increase peak period (6-10 a.m.) motor coach capacity by 25% over existing levels and to increase ferry service by addition

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of another Larkspur Ferry, an increase of about 70% over existing service. Average future loadings on Golden Gate Transit would not exceed capacity when the proposed additions become available./5/

Footnote "/10/" of the third paragraph on p. 95 of the Draft EIR has been changed to "/6/" on p. 93 of the Final EIR. Footnote "/11/" in the second paragraph on p. 97 of the Draft EIR has been changed to "/7/" on p. 95 of the Final EIR. The following has been inserted after that paragraph:

Cumulative vehicular and pedestrian traffic would degrade service levels at two of the intersections shown in Table 8. After cumulative development, the freeway ramp intersections at Mission-Main and Mission-Beale would provide service level F during the p.m. peak.

TABLE 8: LEVELS OF SERVICE AT INTERSECTIONS IN THE VICINITY OF 388 MARKET STREET DURING PEAK-HOURS

	MISSION- BEALE (PM)		MISSION- MAIN (AM)		MARKET- FREMONT (PM)		MARKET- DAVIS (PM)		PINE FRONT (PM)	
	LOS*	V/C**	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C
Existing	D	0.89	D	0.85	A	0.36	A	0.49	A	0.42
With cumulative development***	F	1.56	F	1.29	A	0.39	A	0.52	A	0.45
With 388 Market	F	1.60	F	1.32	A	0.40	A	0.53	A	0.46

*LOS stands for Level of Service which is defined in Table D-1, Appendix D, page 304.

** V/C stands for volume to capacity ratio.

*** The cumulative development is listed in Table D-6, Appendix D. The 388 Market Street project has been separated from the cumulative development in this table.

The comma after "(pp. 89-92)" of the third sentence of the third paragraph on p. 96 of the EIR has been replaced with a period and the remainder of the sentence has been deleted. The following is inserted after that paragraph:

Long-term parking demand for cumulative office development in the greater downtown area has been estimated to be about 15,600 spaces (including the project). The project would represent 2.5 percent of the total demand. Long-term parking demand has been assumed to be distributed over the greater downtown and south of Market areas

rather than being concentrated near the proposed project location. Long-term parking demand is typically work (employee) related and is more likely to be influenced by cost rather than by location (see discussion in Appendix D). A recent survey by the Department of City Planning shows that there are about 37,000 off-street parking spaces in the C-3 district and an additional 6,500 spaces in the area bounded by The Embarcadero, Folsom, Eighth and Bryant Sts./8/ Based upon average occupancy, about 4,100 spaces are available on a daily basis. The cumulative demand for the whole downtown area would create a net deficit of 11,500 spaces. Parking demand has been based upon existing travel patterns and is not dependent upon the availability of parking spaces or by the ability of the freeway and bridge system to carry the additional demand. Freeway and bridge capacity into downtown is essentially fixed at existing levels as major construction would be required to add new capacity. Therefore, the net deficit of 11,500 spaces does not mean that 11,500 autos would be driving on City streets in search of parking. Rather, the travel demand represented by the parking deficit would most likely shift to ridesharing or transit. Increased ridesharing would not only reduce parking demand but would also reduce traffic impacts from the "worst case" impacts shown in Table 8. Increased transit use would add to the demands on the regional and local transit systems, particularly Muni.

The deficit may be less as the survey did not inventory parking in the Civic Center area, the areas west of Eighth St., south of Bryant St. or north of Washington St. The survey did indicate that inside the study area about 6,000 parking spaces have been added since 1967 and approximately 1,400 are proposed to be added (exclusive of any parking to be provided in Yerba Buena Center).

Current City policy, as stated in the Revisions to the Transportation Element of the Master Plan Regarding Parking, is to "Discourage the addition of new long-term parking spaces in and around downtown, limit the amount of new spaces to that which cannot reasonably be accommodated by transit and locate long-term parking facilities in areas peripheral to the downtown commercial district."/9/

The Master Plan Parking Policy has also stated the need to "encourage short-term use of existing parking facilities within and adjacent to the downtown core by converting all-day commuter parking to short-term parking in areas of high demand or to car/van pool parking where short-term parking demands are low."/9/ Accordingly, approximately 14,000 existing off-street spaces in the C-3-0 planning district could be converted to short-term-only parking if the City enacted legislation to establish public control over private garages.

Imbalances in long-term parking demand and potential supply, given projected cumulative development and demand, would be expected to encourage the use of car pools and van pools, or the creation of satellite (intercept) parking facilities in outlying non-residential areas, with shuttle or expanded Muni service to the downtown area, or increased use of transit directly for commuters from San Francisco or

from suburban centers (East Bay, North Bay, Peninsula). Peninsula residents, for example, could find Southern Pacific commuter trains more attractive if they could get no closer to downtown by car than the train terminal at Fourth and Townsend Sts. All transit options would add to the demand on the regional and local transit systems, however, particularly Muni.

Footnote "/12/" in the fourth paragraph on p. 98 of the Draft EIR (second paragraph of the Final EIR) is changed to "/10/".

Footnotes /1/ through /12/ on pp. 99-100 of the EIR have been replaced with the following:

/1/ Trip generation rates by floor area, for various uses, have been compiled by the Department of City Planning in Guidelines for Environmental Evaluation- Transportation Impacts, October 1980. Additional trip generation rates are contained in Caltrans, Trip Ends Generation Research Counts, Volumes 1-11, 1971-77. Office space, retail space, and residential space are estimated to generate, respectively, 17.5, 55 and 7 daily persons trips per 1,000 rentable square feet. Twenty percent of daily office trips, 10 percent of daily retail trips and 10 percent of daily residential trips are assumed to occur during the p.m. peak hour.

/2/ OER recommends use of these modal splits in the Guidelines for Environmental Evaluation-Transportation Impacts, October 1980, when a building-specific determination has not been made.

/3/ The Department of City Planning, Office of Environmental Review (OER), has issued a memorandum, dated July 2, 1982, dealing with the subject of the differences in the land-use and employment trend approaches, and recommending that both approaches be used in future EIRs to give a more balanced assessment of future peak transportation demand. This memorandum is on file with and available from the Office of Environmental Review, 450 McAllister St., 5th Floor. The memorandum calls out some of the fundamental differences between the two approaches and also details the limitations of each approach.

/4/ The 39 affected Muni lines are 1, 1X, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 14, 14GL, 14X, 15, 17X, 21, 27, 30, 30X, 31, 31X, 32, 38, 38L, 38AX, 38BX, 41, 42, 45, 66L, 71, 80X, J, K, L, M and N.

/5/ BART projections from Marty Birkenthal of BART on August 18, 1982; SamTrans projections from Gregory Kipp of SamTrans on August 18, 1982; A-C Transit proposals from Ted Reynolds of AC Transit on August 18, 1982; Golden Gate Transit proposals from Alan Zahradnik of Golden Gate Transit on August 19, 1982, Southern Pacific proposal from Jim Strong, Design Engineer on August 26, 1982.

- /6/ See Appendix D, Table D-11: Pedestrian Flow Regimen, for a description of pedestrian capacities.

/7/ Wilbur Smith and Associates, Center City Circulation and Goods Movement Study, prepared for the San Francisco Transportation Policy Group, September 1980.

/8/ Inventory of Off-Street Parking Spaces, San Francisco Department of City Planning, May 24, 1982.

/9/ Revisions to the Transportation Elements of the Master Plan Regarding Parking, Resolution 7647, San Francisco Planning Commission, January 20, 1977.

/10/ City Planning Commission Resolution 9286, Exhibit A, "Off-Street Freight Loading and Service Vehicle Space Requirement and Guidelines," adopted January 21, 1982.

The following Mitigation Measures that could be implemented by other agencies have been added following mitigation 19:

19A. The projected peak-hour level of service at the Mission-Beale intersection would be reduced to F under the cumulative development conditions. The San Francisco Department of Public Works (DPW) could mitigate this effect by prohibiting left turns from Mission St. onto Beale St. and by restriping the Beale St. approach to the intersection from four lanes to five lanes (and removing parking). These changes would change the Level of Service from F to E during the p.m. peak-hour (volume-to-capacity change from 1.60 to 1.00). Such a measure would be under the jurisdiction of the DPW and would be considered as a possible mitigation measure at such time as the projected conditions develop. Another effect of this measure would be to cause traffic currently turning left to redistribute to other intersections.

19B. The critical approach to the Mission-Main intersection is the freeway off-ramp which currently has two lanes northbound onto Main St. and a left turn lane. The volume projected to use these lanes, including cumulative development, would decrease the level of service to F; as the projected volume would exceed the carrying capacity of the freeway off-ramp as it is currently constructed. An additional left turn lane would need to be added to increase the capacity of the off-ramp. More green time could be allocated to the appropriate phase of the traffic signal by prohibiting left turns from Mission St. onto Main St. This measure would change the Level of Service from F to E for the a.m. peak-hour (volume-to-capacity change from 1.32 to 0.94). Prohibition of left turns on Mission St. would be under the jurisdiction of the DPW. Lane additions on the off-ramp would be under the jurisdiction of CalTrans.

Table D-2 in Appendix D on p. 308 of the EIR is replaced as follows. Table D-3 remains in the EIR. Tables D-4 and D-5, and its accompanying Figure D-4, on pp. 224-226 of the DEIR have been replaced as follows on pp. 310-312 of the FEIR.

TABLE D-4: EXISTING AND PROJECTED MUNI LOAD FACTORS*
(PM PEAK HOUR -- OUTBOUND DIRECTION)

Line	RIDERSHIP				LOAD FACTORS			
	Existing	Future w/o project	Future project	Future w/project	Existing	Future w/o project	Future w/project	Future project
PM PEAK HOUR OUTBOUND MUNI ANALYSIS FOR 388 MARKET AT PINE								
TOTAL PROJECT RIDERS = 155.								
1	1453	1962	5	1967	0.93	1.26	1.26	0.01
1X	640	874	2	876	1.11	1.52	1.52	0.01
2	474	666	1	667	1.10	1.54	1.54	0.01
3	520	704	2	706	1.08	1.47	1.47	0.01
4	467	633	1	634	1.08	1.46	1.47	0.01
5	981	1503	3	1506	0.94	1.44	1.44	0.01
6	544	833	2	835	0.84	1.29	1.29	0.01
7	407	624	1	625	0.77	1.18	1.18	0.01
8	657	1007	2	1009	0.74	1.14	1.14	0.01
9	468	717	1	718	0.89	1.36	1.36	0.01
11	184	281	1	282	0.64	0.98	0.98	0.01
12	451	691	1	692	0.85	1.31	1.31	0.01
14	1038	1591	3	1594	0.92	1.41	1.41	0.01
14GL	205	313	1	314	0.71	1.09	1.09	0.01
14X	344	486	1	487	0.68	0.96	0.97	0.01
15	632	927	2	929	0.88	1.29	1.29	0.01
17X	162	219	1	220	0.64	0.87	0.87	0.01
21	643	985	2	987	0.85	1.30	1.31	0.01
27	145	205	0	205	0.58	0.81	0.81	0.01
30	1415	1948	4	1952	0.92	1.27	1.27	0.01
30X	435	592	1	593	0.86	1.17	1.18	0.01
31	657	941	2	943	1.07	1.54	1.54	0.01
31X	413	564	1	565	0.96	1.30	1.31	0.01
32	476	620	1	621	0.79	1.03	1.03	0.01
38	1963	2747	6	2753	1.01	1.41	1.42	0.01
38AX	453	619	1	620	1.26	1.72	1.72	0.01
38BX	272	371	1	372	0.96	1.32	1.32	0.01
41TC	119	167	0	167	0.41	0.58	0.58	0.01
41MC	184	258	1	259	0.43	0.60	0.60	0.01
42	393	596	1	597	0.99	1.50	1.51	0.01
45	561	759	2	761	0.90	1.22	1.22	0.01
66L	555	743	2	745	0.77	1.03	1.03	0.01
71	447	685	1	686	1.10	1.68	1.68	0.01
80X	416	588	1	589	0.83	1.17	1.17	0.01
J	909	1393	3	1396	0.84	1.28	1.28	0.01
KLMN	5725	8771	18	8789	0.96	1.47	1.47	0.01

*The load factor is the ratio of ridership to existing capacity, where capacity is calculated from the recommended maximum seated and standing loading of the transit vehicles. This is 150% of seated capacity, except for LRV's where maximum is 220% of seated capacity. As estimates of load factors, these should be regarded as approximate. Muni cordon points, where the ridership and capacity counts were made, do not necessarily correspond precisely to the point of maximum loading on each line. The future load factors have been calculated using existing capacity and do not include any proposed capacity increases.

SOURCE: Department of City Planning; Environmental Science Associates, Inc.

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TABLE D-5: LIST OF PROPOSED PROJECTS WITHIN 2000 FT. OF THE SITE, INCLUDED IN THE CUMULATIVE ANALYSIS OF LOCAL VEHICULAR TRAFFIC, TRANSIT AND PEDESTRIAN EFFECTS, AS OF AUGUST 6, 1982.

Projects Under Formal Review 8/6/82

<u>Assessor's Block</u>	<u>Case No.</u>	<u>Project Name</u>
228	81.610ED	569 Sacramento (C)
240	81.705ED	580 California/Kearny
265	81.195ED	388 Market at Pine
269	81.132ED	Russ Tower Addition
288	81.461ED	333 Bush
288	81.687ED	222 Kearny/Sutter
3707	81.492ED	90 New Montgomery
3707	81.245C	New Montgomery Pl.
3708	81.493ED	71 Stevenson
9900	81.63	Ferry Building Rehab

Approved Projects 8/6/82

206	81.165D	401 Washington at Battery
227	80.296	Bank of Canton
261	81.249ECQ	333 California
262	81.206D	130 Battery
267	81.241D	160 Sansome
268	81.422D	250 Montgomery at Pine
311	82.120D	S.F. Federal
3709	81.113ED	Central Plaza
3715	82.16EC	121 Steuart
3717	80.349	Spear/Main (160 Spear)
3717	82.82D	135 Main
3722	81.417ED	144 Second at Minna
3738	DR80.5	315 Howard

Projects Under Construction 8/6/82

196		736 Montgomery
196	CU79.49	Pacific Lumber Co.
208	81.104EDC	Washington/Montgomery
237	DR80.6	353 Sacramento (Daon)
239	DR80.1	456 Montgomery
240	DR80.16	550 Kearny
263	CU79.12	101 California
287	81.550D	Sloane Building (C)
288	DR80.24	101 Montgomery
289	81.308D	One Sansome
292	DR79.13	Crocker National Bank
3708	80.34	25 Jessie/Ecker Square

Projects Under Construction 8/6/82 (continued)

3709	80.36	Five Fremont Center
3712	79.11	Federal Reserve Bank
3715		141 Steuart
3717	79.236	101 Mission at Spear
3717		150 Spear
3718	79.12	Pacific Gateway

(C) = Conversion (generally industrial and/or warehouse to office)

SOURCE: Department of City Planning.

TABLE D-5A: GROSS SQUARE FEET OF CUMULATIVE OFFICE AND RETAIL DEVELOPMENT WITHIN 2000 FEET OF OF THE SITE AS OF AUGUST 6, 1982

<u>Status of Project</u>	<u>Office (Gross Sq. Ft.)</u>		<u>Retail (Gross Sq. Ft.)</u>	
	<u>Total New Constr.</u>	<u>Net New Constr.</u>	<u>Total New Constr.</u>	<u>Net New Constr.</u>
Under Formal Review	2,579,300	2,231,900	166,450	123,450
Approved	2,528,700	2,017,450	59,100	47,260
Under Construction	<u>6,520,800</u>	<u>6,205,100</u>	<u>232,650</u>	<u>108,450</u>
GRAND TOTALS	11,628,800	10,454,450	458,200	279,160

SOURCE: Department of City Planning.

The following has been added beginning on p. 312 of the FEIR:

Travel Demand

Travel demand from the 16.1 million gross square feet of net new cumulative office development and 535,000 gross square feet of net new cumulative retail development in downtown San Francisco has been estimated using a land-use approach for trip generation. Future travel into the downtown has been assumed to be a result of construction and occupancy of downtown office and retail space. The Office of Environmental Review of the Department of City Planning

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(DCP) has identified office projects in the greater downtown area as being under formal review, approved or under construction. Table D-6 shows the list of projects separated by review status and includes

TABLE D-6: CUMULATIVE* OFFICE DEVELOPMENT IN DOWNTOWN SAN FRANCISCO AS OF AUGUST 6, 1982

Projects under Formal Review 8/6/82

<u>Assessor's Block</u>	<u>Case No.</u>	<u>Project Name</u>
58	82.234ED	Roundhouse
112	81.258	Ice House Conversion (C)
136	81.245	955 Front at Green
176	81.673	Columbus/Pacific Savoy
228	81.610ED	569 Sacramento (C)
240	81.705ED	580 California/Kearny
265	81.195ED	388 Market at Pine
269	81.132ED	Russ Tower Addition
270	81.175ED	466 Bush
288	81.461ED	333 Bush (Campeau)
288	81.687ED	222 Kearny/Sutter
669	81.667ED	1361 Bush (C)
716	81.581ED	Polk/O'Farrell
3702	81.549ED	1145 Market
3703	81.494ED	1041-49 Market
3707	81.492ED	90 New Montgomery
3707	81.245C	New Montgomery Pl.
3708	81.493ED	71 Stevenson
3733	82.29E	832 Folsom
3760	81.386	401 6th
3776	81.59	Welsh Commons
3778	81.630ED	548 5th/Brannan
3781	82.99E	Greyhound Bus Terminal
3786	82.33E	655 5th/Townsend
3789	82.31EV	615 2nd/Brannan (C)
9900	81.63	Ferry Building Rehab
9900		Pier One Development
9900		Agriculture Building

Approved Projects 8/6/82

106	81.415ED	1299 Sansome
161	80.191	Mirawa Center
164	81.631D	847 Sansome
164	81.573D	50 Osgood Place
166	CU81.7	222 Pacific (C)
166	80.15	750 Battery

(continued on next page)

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Approved Projects 8/6/82 (continued)

<u>Assessor's Block</u>	<u>Case No.</u>	<u>Project Name</u>
206	81.165D	401 Washington at Battery
227	80.296	Bank of Canton
261	81.249ECQ	333 California
262	81.206D	130 Battery
267	81.241D	160 Sansome
268	81.422D	250 Montgomery at Pine
271	81.517	453 Grant
271		582 Bush
294	82.870	44 Campton Place
311	82.120D	S.F. Federal
351	DR79.24	Mardikian/1170-1172 Market
3512	82.14	Van Ness Plaza
3518	81.483V	291 10th St.
3705	80.315	Pacific III Apparel Mart
3709	81.113ED	Central Plaza
3715	82.16EC	121 Steuart
3717	80.349	Spear/Main (160 Spear)
3717	82.82D	135 Main
3722	81.548DE	466 Clementina (C)
3722	81.417ED	144 Second at Minna
3724	81.102E	Holland Ct. (C)
3729	82.860	774 Tehama
3733	81.2	868 Folsom
3735	80.106	95 Hawthorne (C)
3738	DR80.5	315 Howard
3741	82.203C	201 Spear
3749	81.18	Marathon - 2nd & Folsom
3751	77.220	National Maritime Union
3752	77.220	Office Bldg. (YBC SB-1)
3763	81.287V	490 2nd at Bryant (C)
3763	81.381	480 2nd at Stillman (C)
3775	81.147V	338-340 Brannan (C)
3776	81.693EV	539 Bryant/Zoe
3788	81.296Z	690 2nd/Townsend (C)
3787	81.306	252 Townsend at Lusk
3789	81.552EV	625 2nd/Townsend (C)
3794	81.569EV	123 Townsend
3803	81.244D	China Basin Expansion

Projects under Construction 8/6/82

163	81.1	901 Montgomery
164	81.251D	936 Montgomery-(disco)
167		Golden Gateway III
196		736 Montgomery
196	CU79.49	Pacific Lumber Co.
208	81.104EDC	Washington/Montgomery

(continued on the next page)

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Projects under Construction 8/6/82 (continued)

<u>Assessor's Block</u>	<u>Case No.</u>	<u>Project Name</u>
237	DR80.6	353 Sacramento (Daon)
239	DR80.1	456 Montgomery
240	DR80.16	550 Kearny
263	CU79.12	101 California
287	81.550D	Sloane Building (C)
288	DR80.24	101 Montgomery
289	81.308D	One Sansome
292	DR79.13	Crocker National Bank
312	79.370	50 Grant
351	79.133	U.N. Plaza
762		Opera Plaza
3702	81.25	1155 Market/8th
3708	80.34	25 Jessie/Ecker Square
3709	80.36	Five Fremont Center
3712	79.11	Federal Reserve Bank
3715		141 Steuart
3717	79.236	101 Mission at Spear
3717		150 Spear
3718	79.12	Pacific Gateway
3724		Yerba Buena West
3735		Convention Plaza

* Includes all office projects in the greater downtown area and the south of Market area for which a Preliminary Draft EIR has been submitted to the City for review or for which plans are well defined and all office projects in redevelopment areas that are under construction or for which Land Disposition Agreements have been approved. It does not include projects in Rincon Point - South Beach or Yerba Buena Center Redevelopment Areas for which no Land Disposition Agreements have been approved by the San Francisco Redevelopment Agency Commission, as it is not possible to know what development will be approved in these areas. It does not include Mission Bay as no formal proposal has been submitted to the City. See Appendix D for further discussion.

** (C) - Conversion (generally industrial and/or warehouse to office) Refer to Appendix D, (pp. 197-199), for discussion of which projects were included in this list.

SOURCE: Department of City Planning.

Assessor's Block number and DCP case number for each project. Table D-7 contains the total gross square feet of office and retail space for each review status category. The information contained in these tables represents the best data available from the Department of City Planning at the time of preparation of this document.

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TABLE D-7: GROSS SQUARE FEET OF CUMULATIVE OFFICE AND RETAIL DEVELOPMENT* IN DOWNTOWN SAN FRANCISCO AS OF AUGUST 6, 1982

<u>Status of Project</u>	<u>Office (Gross Sq. Ft.)</u>		<u>Retail (Gross Sq. Ft.)</u>	
	<u>Total New Constr.</u>	<u>Net New Constr.</u>	<u>Total New Constr.</u>	<u>Net New Constr.</u>
Under Formal Review	4,220,970	3,801,570	310,650	249,150
Approved	5,428,350	4,862,600	187,850	150,310
Under Construction	<u>7,753,050</u>	<u>7,427,350</u>	<u>260,250</u>	<u>136,050</u>
GRAND TOTALS	17,402,370	16,091,520	758,750	535,510

* Includes all office projects in the greater downtown area and the south of Market area for which a Preliminary Draft EIR has been submitted to the City for review or for which plans are well defined and all office projects in redevelopment areas that are under construction or for which Land Disposition Agreements have been approved. It does not include projects in Rincon Point - South Beach or Yerba Buena Center Redevelopment Areas for which no Land Disposition Agreements have been approved by the San Francisco Redevelopment Agency Commission, as it is not possible to know what development will be approved in these areas. It does not include Mission Bay as no formal proposal has been submitted to the City. See Appendix D for further discussion.

SOURCE: Department of City Planning.

The list of projects shown in Table D-6 and the development totals shown in Table D-7 include all office projects in the greater downtown area and the south of Market area that are under construction or have been approved, and all projects for which a Preliminary Draft EIR has been submitted to the City for review or for which plans are well defined, and all office projects in redevelopment areas that are under construction or for which Land Disposition Agreements have been approved by the San Francisco Redevelopment Agency Commission. Projects that were not definitive and/or appear to be inactive or withdrawn by the project sponsor were not included in the cumulative analyses.

Hotel projects have not been included in the cumulative analyses because hotel uses have different peaking characteristics from office buildings and generally do not significantly affect peak-hour traffic or transit. Residential projects have not been included because

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residential travel in the downtown is generally in the contra-commute direction during peak-hours and because the office trip generation rate and modal split distribution are predicated on the assumption that housing would be available in the City. Thus inclusion of residential projects would be double counting of project generated travel.

Two redevelopment areas (Yerba Buena Center and Rincon Point - South Beach) and one private development (Mission Bay) are located in or near the greater downtown area. In the redevelopment areas the majority of building sites do not yet have Land Disposition Agreements (LDA) approved. Until such time as specific LDA's are approved, no estimate of travel demand can be made (thus, parcels for which no LDA exists have not been included in the cumulative analyses). Development in the Yerba Buena Center (YBC) Redevelopment Area will be in accordance with the YBC Redevelopment Plan, as amended. Possible land uses that would be in accordance with the Yerba Buena Center Redevelopment Area Plan include commercial entertainment, convention facility (in place), cultural, downtown support service, exhibit/ballroom space, hotel rooms, institutional, light industry, market-rate dwelling units, subsidized dwelling units, office, park or plaza, pedestrian concourse, parking and, retail./3/ Possible land uses in the Rincon Point - South Beach Redevelopment Area include hotel, housing, office, open space, public parking, retail and, warehouse uses./4/ Mission Bay has not been included in the cumulative analyses as no application has been submitted to the City and it is uncertain what formal proposal may be made.

Existing office and retail space that would be replaced by new buildings was subtracted from the proposed new construction to better approximate the impacts the new buildings would have on transportation facilities. As shown in Table C-2, net new office and retail space is less than total new construction as a result of subtracting out existing office and retail space on sites proposed for new buildings. "Net new" space is used to refer to the amount of new construction in excess of existing space on each site in terms of gross square feet of floor space. It does not refer to net leasable or net rentable floor space).

Estimates of future travel have been made using trip generation rates of 17.5 person trip ends (one way trips) per 1,000 net leasable square feet of net new office space and 100 person trip ends (pte) per 1,000 gross square feet of net new retail space./1/ Gross square feet of office space was converted to net leasable square feet by assuming an efficiency factor of 80%. The retail space has been assumed to be primarily "ground-floor retail" which would serve the office building users. Based upon survey data collected at the Embarcadero Center, approximately 45% of the travel generated by "ground-floor retail" uses has been assumed to be oriented to the office uses on-site and is already included in the office trip generation rate. Thus, 55% of the retail trip generation has been assumed to be "new" to each site./2/

P.M. peak-hour travel from the cumulative development was assigned to modes of travel based upon the regional distribution and modal split shown in Table D-1. During the p.m. peak hour about 20% of the office travel and 10% of the retail travel was assumed to occur. Of the office travel approximately 90% [during peak-hours] was assumed to be work-related and 10% was assumed to be other travel. On a daily basis, office travel was assumed to be 57% work-related and 43% other travel./5/

To calculate vehicle trip ends, average automobile occupancies were assumed for each regional area based upon available data. Currently, commute travel to the East Bay is about 1.8 persons per vehicle; the north Bay is about 1.5 persons per vehicle; and to the Peninsula is about 1.2 persons per vehicle./6/ San Francisco auto occupancy was assumed to be 1.4 persons per vehicle./7/

A basic assumption in all of the transportation analyses is that existing regional distributions and modal splits would continue into the future unchanged. Thus, the implicit assumption has been made that about 40% of the future employees would live in San Francisco. If housing is not available in the City then a greater impact than noted would result on the commute corridors into the City from the North Bay, East Bay and Peninsula. If housing is not available in the City, however, the impact on the MUNI would be less than noted because City residents are the majority of Muni users.

Long-term parking demand was based upon the number of expected work-related auto trips into the downtown. Parking supply was estimated over the greater downtown and South of Market area as travel time from parking space to final destination was no longer assumed to be the primary determinant for parking selection.

Vehicle travel and parking demand have been based upon demand projections and are unconstrained by the ability of the freeway and bridge system to carry the additional demand. Freeway and bridge capacity into downtown is essentially fixed at existing levels as major construction would be required to add new capacity. Current levels of vehicle traffic on the freeway and bridge system are at or near capacity. Thus, if the projection of person trip ends in autos is assumed to be correct, the levels of vehicle occupancy would have to increase in the future as the freeway and bridge system could not handle the increase in single-occupant autos. If vehicle occupancy were to increase, vehicle trip ends and subsequent parking demand would be less than projected. Alternately, the peak hours level of demand could spread into hours adjacent to the peak hour (as is currently happening). However, there is a finite limit as to how far the peak can spread over time and still allow business to function.

Transit demand has been projected based upon existing travel patterns and is not dependent upon the availability of transit capacity. Two levels of operations (load factor) calculations have been made. One load factor has been calculated based upon existing capacity and is

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intended to represent conditions that would result if no improvements are made to the transit system. The second load factor is calculated based upon forecast capacity (as defined in each agency's five-year plan) and is intended to portray conditions that would result if planned, scheduled improvements are made. Table D-8 relates projected ridership to capacity of the outbound p.m. peak hour service on the various transit agencies.

Employment Trend Approach to Cumulative Analysis

In this and other San Francisco EIRs, a land-use type of approach has been used to estimate employment and the resultant transportation impacts of both the proposed project and cumulative development. An alternate type of approach is to forecast travel demand based upon regional projections of employment share (employment trend approach)./8/ Briefly, the fundamental differences between (and limitations of) the two approaches are:/9/

The land-use approach (as it has been applied in this EIR) has used net new office space actually proposed or under construction (less space in buildings demolished to make way for new buildings) as the basis for travel generation.

The land-use approach assumes that literally all of the currently proposed development in the downtown area will be constructed and fully occupied within the time frame of the 388 Market St. project development and occupancy. No allowance has been made for less than 100 percent occupancy, for proposed developments that are never constructed, or for those which would not be occupied within the time frame of the 388 Market St. project.

The employment trend approach generates a total increase in employment in downtown that has taken account of loss of employment as industries and offices move out of the City, replacement of one type of industry with another (industry shifts), as well as, replacement of existing office space with new office space. The employment trend approach makes no implicit assumptions concerning occupancy rates or actual square footage of development constructed; rather, it generates total employment increases from a standpoint which assigns jobs by metropolitan sector (area) based upon extrapolation of past trends and which considers long-term industry shifts to, within, and away from each area.

Note that neither of the two approaches has attempted to project future changes in modal split.

To illustrate the differences in projections resulting from the two approaches, Table D-9, following, shows the total employment projections by the two methods (and the project's share thereof), the regional distribution of trips, and Muni's share of the new transit travel (and the project's share thereof).

TABLE D-8: AFTERNOON PEAK HOUR OUTBOUND TRANSIT RIDERSHIP

Agency	RIDERSHIP			LOAD FACTOR (Existing Capacity)*		LOAD FACTOR (Proposed Capacity)**	
	Existing	Existing plus Cumulative	Existing plus Cumulative plus Project	Existing	Existing plus Cumulative	Existing plus Cumulative plus Project	Existing plus Cumulative plus Project
Muni***	25,810	37,695	37,780	0.90	1.32	1.32	1.11
BART							
Transbay Westbay	13,600 6,445	18,900 9,200	18,920 9,220	0.90 0.61	1.25 0.88	1.25 0.88	0.76 0.56
A-C Transit	9,560	13,260	13,280	0.72	0.99	0.99	0.99
SamTrans	1,700	2,250	2,250	0.78	1.03	1.03	0.36
SPRR	5,180	7,220	7,230	0.78	1.10	1.10	1.10
Golden Gate Motor Coach Ferry	4,510 800	6,290 1,180	6,300 1,180	0.66 0.39	0.92 0.57	0.92 0.57	0.73 0.33

*Load factor based upon existing (recommended) maximum capacity. A load factor of 1.00 is equivalent to 100% of recommended seated and standing capacity being used. Recommended maximum capacity is less than "crush" loadings that occur occasionally.

** Proposed capacity as specified by each agency's Five-Year Plan.

*** 1982 Muni ridership is approximate based on a compilation of Muni ridership by the Department of City Planning and Office of Environmental Review.

SOURCE: Environmental Science Associates, Inc.

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TABLE D-9: COMPARISONS OF LAND-USE AND EMPLOYMENT TREND APPROACHES

Approach	Downtown	Project Share*	Regional Trip Share				Muni	Project Share***
	Employment Increase		S.F.	Pen.	E.B.	N.B.	Peak-hour Increase**	
Land Use	64,400	0.5%	49%	16%	24%	11%	12,000	0.7%
Empl. Trend+ (maximum)	56,100	0.6%	50- 54%	19%	17- 21%	10%	12,900++	0.6%

NOTE: As explained in the text, comparisons between the entries for the two approaches must be made with the understanding that the land-use approach reflects increases in employment and transit demand based solely upon increases in downtown office space, while the employment trend approach reflects total increases therein based upon historical trends. The differences among the regional trip share figures reflect these and the other differences between the two approaches.

*Employment generated by the proposed 388 Market St. project, as a percent of the cumulative downtown employment increase.

**The Muni peak-hour increase is a demand projection (based upon existing and long-term employment trends) that is not dependent upon available or expected transit capacity.

***Muni peak-hour trips generated by the proposed 388 Market St. project, as a percent of the cumulative downtown Muni peak-hour increase.

+These figures, represent the worst-case analysis under the employment trend approach reviewed and accepted by MTC, ABAG and Muni.

++Based on 54 percent regional trip split to San Francisco (worst-case).

As shown in the table, the employment trend approach predicts about 15 percent fewer employees in the downtown and about eight percent more riders on the Muni than does the land-use approach. The employment trend approach would thus approximate the transit demand impacts discussed in Section IV. D, Transportation Impacts.

Several considerations concerning both of the methods need to be noted. The land-use approach, as it has been applied in San Francisco EIR's, analyzes impacts for the p.m. peak hour, whereas the employment trend approach analyzes the a.m. peak. Several reasons exist as to why one peak (or the other) may be the better one to analyze.

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First, the p.m. peak may be more useful to analyze, in that actual observation shows that the p.m. peak has a greater overall effect on the local street network and transit system in the downtown area than does the a.m. peak, as more travel takes place during the p.m. peak. Also, transit service is more inclined to differ from scheduled times during the p.m. peak than during the a.m. peak, as operational delays have had an 8- to 10-hour period over which to accumulate. Finally, the on-ramps to the freeway/bridge system are greater bottlenecks (in the p.m. peak) than are the off-ramps (in the a.m. peak).

Conversely, the peaking characteristics of the a.m. peak may be more useful in that they are much sharper than those of the p.m. peak (i.e., a greater percentage of the peak-period travel occurs during a single hour). Also, as a result of the bridge system into San Francisco, travel inbound into the City is much easier to document, as tolls are collected on the inbound direction on the Golden Gate and Bay Bridges. Finally, a greater proportion of the travel occurring during the a.m. peak is employment-related; the p.m. peak also includes shopping and pleasure trips which are not directly affected by increased office space.

The land-use approach, as it has been used in this document, examines the p.m. peak because it has been observed to be the worst case for congestion on the City transportation system. This analysis does not reflect the spreading of the p.m. peak that is currently occurring, as all of the new trips have been assumed to take place in a single hour.

While the land-use approach assumes all new office space is fully occupied, the assumption of a functional vacancy rate of 5 percent is not uncommon./8/ With 16.1 million square feet of new office space assumed in the land-use approach to be occupied by 1990, a 5 percent vacancy would amount to approximately 805,000 square feet, representing 7,200 employees (at 250 square feet per employee), 600 of which would ride Muni in the p.m. peak hour. This adjustment for vacancy would thus reduce Muni peak-hour impacts in the cumulative analysis stated above by these 600 riders.

The land-use approach calculations have assumed transit capacity to be fixed at existing levels. The OER memorandum/8/ points out, "It should be recognized that transportation is a more 'elastic' resource with many options for expansion including increasing existing capacity by using articulated vehicles, expanded car pool and van pool programs and increasing the peak commuter period through flex-time programs, among others."

If future office development does not occur along the lines of the past long-term trends as assumed in the employment trend approach, then the projections made in Working Paper I would be revised. The average annual growth during the period 1965-1980 was less than the growth per year proposed, approved, or under construction for the period 1980-1984. The employment trend approach assumes average growth through 1990 would be at the lower historic rate, reflecting activity fluctuations from the current rate including slowdowns due to changing business conditions.

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Until a forecast exists to determine how the current decade's cycle of development may differ from the past, a judgment of the applicability of results from Working Paper I may not be made. Consequently, this EIR has retained the land-use approach and presented this comparison of the employment trend approach. Both methods should be looked upon as describing potential scenarios of future conditions.

NOTES

/1/ Land uses from Draft Second Supplement Yerba Buena Center Final Environmental Impact Report, San Francisco Department of City Planning May 28, 1982

/2/ Land uses from Rincon Point - South Beach Redevelopment Area, San Francisco, California, Final Environmental Impact Report/Environmental Impact Statement, San Francisco Department of City Planning certified November 5, 1980.

/3/ The regional distribution, office trip generation, trip purpose and peak hour percentage are from Attachment 1 of the Guidelines for Environmental Impact Review, Transportation Impacts Department of City Planning, October 1980 and the modal split assignment is from Attachment 2 supplemented by survey data collected by Environmental Science Associates, Inc.

/4/ Retail trip generation is from Trip Generation, Institute of Transportation Engineers (ITE), 1979. Rates have been adjusted from vehicle trip ends to person trip ends based upon an assumed vehicle occupancy of 1.4 persons per vehicle. The survey of retail travel was conducted by Environmental Science Associates at Embarcadero Center on Thursday, June 17, 1982 between 10:00 a.m. and 4:00 p.m.

/5/ The percentage of work and non-work trips is from the Guidelines (see note 1) and from Urban Travel Patterns for Hospitals, Universities, Office Buildings, and Capitols, Report No. 62, National Cooperative Highway Research Program.

/6/ East Bay auto occupancy is from data collected at the Bay Bridge toll plaza by the Metropolitan Transportation Commission; North Bay auto occupancy is from data collected at the Golden Gate Bridge toll plaza by the Golden Gate Bridge, Highway and Transportation District; Southern Peninsula auto occupancy is an estimate from CalTrans.

/7/ The occupancy rate is from The Downtown Traffic and Parking Study, San Francisco Department of Public Works, 1970.

/8/ Department of City Planning, Working Paper I, Projection of Long-range Transportation Demand, May, 1982, prepared in cooperation with the Metropolitan Transportation Commission (MTC), the Association of Bay Area Governments (ABAG), and the Municipal Railway (Muni). Employment trend data was compiled by ABAG from trends in

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County Business Pattern (U.S. Department of Commerce, Bureau of the Census, March 12, 1979), with 1979 as the base year for future projections and regional distributions. Modal split data are from the 1975 Travel Survey prepared by MTC.

/9/ The Department of City Planning, Office of Environmental Review (OER), has issued a memorandum, dated July 2, 1982, dealing with the subject of the differences in the land-use and employment trend approaches, and recommending that both approaches be used in future EIRs to give a more balanced assessment of future peak transportation demand. This memorandum is on file with and available from the Office of Environmental Review, 450 McAllister St., 5th Floor. The memorandum calls out some of the fundamental differences between the two approaches and also details the limitations of each approach.

Traffic and Pedestrians

COMMENTS

"Project's impact on...pedestrian traffic should be included."
(Paul H. Hughes)

"All through this there's almost no mention of Davis St....They just talk about Front and Pine and Market and don't talk about Davis. And Davis, if I read the map correctly, is a one-way street going towards Beale St., which is a one-way street, which then goes on the freeway....There ought to be more attention given to pedestrian crossing, if there will be pedestrians."
(Commissioner Bierman)

RESPONSE

Based on traffic counts and observations made on October 14, 1981, the Davis St. approach to Market St. operates now at service level A, or an estimated 46 percent of its capacity. The project would increase traffic volumes on Market St. during the p.m. peak hour by an estimated 30 vehicles. If all of these vehicles were to turn onto Market St. from Davis St., the Davis St. approach to Market St. would operate at about 48% of capacity, and would remain at level of service A.

A discussion of the project's impact on pedestrians is included on pp. 92-93 of the EIR. During the period the project area was studied by the consultant, the Davis St. sidewalk was closed on the west side due to ongoing construction of 101 California St. It was estimated on p. 94 of the 101 California St. EIR (EE 78.27, certified August 9, 1979) that 101 California St. would add about 640 pedestrians to the Davis St. sidewalk during the p.m. peak hour. Few pedestrians from the 388 Market St. project would be expected to use Davis St. during the peak hour, as it does not lead from the project site to many transit stops.

Pedestrian traffic in the crosswalk across Davis and Pine Sts. would roughly double, and most of the increase would be from the 1.3 million sq. ft. 101 California St. Building. The 388 Market St. project would add

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only about 0.1 million net sq. ft. of office space, so that it would have a correspondingly lesser effect on pedestrian traffic there. The crosswalk along Market St. at Davis and Pine Sts. would continue to operate under better conditions than the crosswalks at the intersection of Pine and Front Sts., due to its greater width. Also, the project is proposed to have direct underground BART/Muni subway connection; existing stairs from the Market St. sidewalk to the subway are located on the project block.

The crosswalks at the intersection of Pine and Davis Sts. are discussed in the first paragraph on p. 93 of the Final EIR. As noted in the last sentence of this paragraph: "Other sidewalks and crosswalks in the area would operate under better conditions with no notable delays occurring due to crowding./6/"

Parking

COMMENTS

"Page 2, Environmental Setting: Please indicate the number of parking spaces that the subsurface garage at 340 Market Street building holds."
(Paul H. Hughes)

"I didn't find in the EIR a parking diagram, which usually we have, and then we are able to know whether any building sites that are proposed for development are included in the parking figures. So I think we need the parking map. Page 2 and p. 46 speaks about 13,000 off-street public parking spaces. I don't know whether those parking spaces, that figure of 13,000, includes any approved or proposed sites that we have dealt with....I would like to know whether that figure is up to date as of today."
(Commissioner Bierman)

"I didn't see any discussion about mitigation for the ever-growing parking deficit problem."

"If you allow this kind of residential housing, you need to have long-term parking. And it is clear that we need more short-term parking downtown. I would like to have that looked at." (Commissioner Nakashima)

RESPONSE

The third sentence in paragraph four on p. 2 of the EIR is revised to read: "The 340 Market St. building is eight stories tall with a subsurface parking garage accommodating about 42 passenger vehicles; the building contains a savings bank and a men's clothing store on the ground-level and seven floors of office space." The following sentence is added after the fourth sentence of the first paragraph on p. 27 of the EIR: "The parking facility contains one level and accommodates about 42 passenger vehicles parked by a garage attendant."

Existing off-street public parking spaces are described on p. 46 of the EIR. The parking diagram contained in Central Plaza EIR includes the same

area analyzed for the 388 Market Street EIR. The following has been inserted after the first sentence on p. 46 of the EIR: "Figure 22A showing the location of existing off-street public parking spaces contained in the Central Plaza EIR (81.113E, SCH #82032310, Certified July 15, 1982, p. 54a) is hereby incorporated by reference into this EIR pursuant to California Environmental Quality Act (CEQA) Guidelines, California Administrative Code, Title 14, Section 15140. This report is available for public review at the Office of Environmental Review, 450 McAllister St., Fifth Floor."

The second sentence on p. 98 of the Draft EIR has been replaced with the following as the second sentence of the first full paragraph on p. 98 of the Final EIR:

The project sponsor proposes to designate 21 of the 47 proposed parking spaces to serve the 57 condominium units; about 26 spaces would be for the commercial portion of the building.

The office uses would create a demand for about 65 short-term spaces, and the 26 spaces to be designated for short-term parking would leave an estimated deficit of about 40 spaces. Except by construction of parking outside of the "downtown core automobile control area," no direct mitigation is in conformance with the City's 1977 Revisions to the Transportation Element of the Master Plan Regarding Parking. The Master Plan discourages the provision of off-street parking in the downtown core.

AIR QUALITY

On-Site Air Quality Measurements

COMMENTS

"Page 47 and 48, air quality. I have been talking for quite some time about the inadequacy of taking air quality readings in spots that are not similar to our downtown....The Air Quality Control people...have done a reading at Second and I think it's Howard or Harrison on the second floor and on the fifth floor....They have done readings that show that there is a marked change downtown. These are done at the second floor level. Now, I have been asking for ground level -- I'd like it around Beale and Main at night, I guess, Beale and Mission. They have a reading on Geary St., which is markedly different than a reading on Ellis St. Those are just three readings that were done."

"Somebody...can pool their resources and get a private [air quality] reading, but preferably they will get Air Quality to go there and do a reading. I suppose you'd have to do it several days in different kinds of weather, maybe, but it ought to be done." (Commissioner Bierman)

RESPONSE

The concentration of carbon monoxide (CO) in the atmosphere at a particular location can be thought of as resulting from a superposition of two components: a background concentration, reflecting the cumulative effects of distant sources of CO, and the local concentration, indicative

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of the effects that local emission sources (particularly traffic) and meteorological conditions have on the total CO concentration at a specific site.

The readings of CO concentration taken by the Bay Area Quality Management Districts (BAAQMD) at the monitoring station at 900 23rd St. (transferred from 939 Ellis St. in January 1980) provide information only on the city-wide CO background concentration. The BAAQMD readings are not used in EIRs to represent sidewalk-level concentrations on streets downtown. When EIRs are prepared for projects in downtown San Francisco, a local CO concentration, which reflects the contribution of local sources under worst-case meteorological conditions, is calculated, based on actual traffic counts at the specific location and using BAAQMD-approved procedures. Calculations were made, using BAAQMD-approved procedures, of the future CO concentrations at two locations on Market and Pine Sts. near the project site; the calculated values are given in Table 9 on p. 101 of the EIR. Since the total CO concentration near these sites is the total of background (ambient) and local concentration, the total sidewalk-level concentration can never be lower and is often significantly higher than the concentrations measured at 23rd St., as shown in the EIR. (Compare ambient [background] concentrations to street-specific concentrations in Table 9, below.)

For the past few years, the BAAQMD has been periodically monitoring CO concentrations at selected sites in downtown San Francisco (at Battery and Washington Sts., Geary and Taylor Sts., and Harrison and Spear Sts.) using mobile sensing equipment. A comparison of the CO concentrations measured by this "Hotspot Monitoring Program" with values calculated for the 388 Market St. Building shows that both are in accord in pointing out general trends. The calculations for the 388 Market project show that the eight-hour CO standard is more likely to be violated under existing conditions than is the one-hour standard. Measurements by the BAAQMD show that the eight-hour standard was violated at two of the three "Hotspot" sites, while the one-hour standard was never closely approached. None of the "Hotspot" sites would exactly represent conditions at the 388 Market St. site.

On-site monitoring is expensive and must be conducted during periods of weather favorable to high air pollution levels in order to give an indication of the peak CO concentration expected at that site. The BAAQMD believes that if a monitoring program of approximately eight weeks duration were conducted at a site during the late fall or winter (the highest air pollution concentrations in the Bay Area are usually measured during this period), the CO concentrations measured would probably be more indicative of existing worst-case concentrations than values calculated from a theoretical model (T. Perardi, Dept. head, Research and Planning, telephone conversation, May 25, 1982), although it is not expected that measured concentrations would differ from calculated values by more than +10 percent. If the monitoring were done for a shorter period or under more favorable weather conditions, the maximum expected CO concentrations at the site would probably be underestimated. In any case, information gained from an eight-week on-site monitoring program would only represent existing SETTING conditions. Cumulative and project-generated air quality

impacts in 1987 would still be determined using the BAAQMD-approved calculations as presented in the EIR.

Based on the updated list of cumulative office and retail development dated August 6, 1982 (see Appendix D, Tables D-6 and D-7, pp. 43-46 of this document), the cumulative air quality section has been updated. In the first paragraph on p. 100, change "1985" to "1987" and change "0.3 parts per million" to "0.1 parts per million." In the second paragraph on p. 100, change "1985" to "1987" and "1981" to "1982". Table 9 on p. 101 has been replaced with the following:

TABLE 9: PROJECTED WORST-CASE CUMULATIVE SIDEWALK CARBON MONOXIDE CONCENTRATION IMPACTS AT STREETS NEAR THE PROJECT*

	Existing 1982	Cumulative Development Without Project 1987	Cumulative Development Project + Project 1987
	(in parts per million)		
<u>1-Hr. Concentration</u> (1-hr. standard = 35 ppm)			
Ambient level	10.3	8.4	8.4
Market Street	15.7	12.5	12.6
Pine Street	12.5	10.0	10.0
<u>8-Hr. Concentration</u> (8-hr. standard = 9 ppm)			
Ambient level	6.5	5.2	5.2
Market Street	7.5	5.9	5.9
Pine Street	6.9	5.5	5.5

*Concentrations at the sidewalk adjacent to the most-heavily traveled roadway segment were calculated according to the BAAQMD Guidelines for Air Quality Impact Analysis of Projects, 1975, updated with 1981 ARB EMFAC6 emission factors; worst-case meteorology and roadway configuration are assumed. The ambient or background level in 1982 was calculated as the three-year average of the second highest annual concentrations. The background level was adjusted to 1987 according to the regional emission projected for that year by the 1982 Bay Area Air Quality Plan. The year 1987 was used because the most recent BAAQMD projections and data are for 1987. Most downtown developments in the cumulative list, including the project, are expected to be completed during the 1982-87 period.

SOURCE: Environmental Science Associates, Inc.

In the second paragraph on p. 102, change "0.03 percent" to "0.01 percent" and change "1984" to "1987".

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Replace Table 10 on p. 102 of the EIR with the following:

TABLE 10: 1987 ANNUAL POLLUTANT EMISSIONS (tons per year)

<u>Pollutant</u>	<u>Project</u>	<u>Cumulative Development (including project)</u>	<u>Regional</u>
Carbon Monoxide	23.4	4,127	854,000
Hydrocarbons	2.1	364	188,000
Nitrogen Dioxide	3.0	534	198,000

SOURCE: Environmental Science Associates, Inc.

Air Quality Standards

COMMENTS

"I have an article that I cut out of the paper,...about the unlikelihood of the current [Reagan] administration continuing...the stringent air control.

It is just getting more and more and more clogged....It [the cumulative effect of new development] could be dangerous. And we are not coping to it.

"Page 101, 102, I would give you this article in the newspaper about air quality and how the air quality standards are probably going to be relaxed or at least there is a move to try to relax them, and that we could be creating a somewhat nightmarish situation for ourselves if we are relying on cars and the emission from cars being so much better." (Commissioner Bierman)

RESPONSE

Both the federal government and the State of California currently set standards for the maximum allowable ambient carbon monoxide (CO) concentrations. The national standards are values that are not to be exceeded more than once per year while the state standards are not to be equalled or exceeded at all. At present, the eight-hour ambient CO standards are set at 9 ppm by both federal and state governments. (California Air Quality Data, Summary, California Air Resources Board (CARB), 1980, p. 147 - 148).

Since over 90% of the ambient CO comes from vehicular sources, the primary means of controlling the ambient CO concentration is to limit vehicular emissions. Under California law, and as permitted by the Clean Air Act, the responsibility for establishing motor vehicle emission standards rests with the CARB (San Francisco Bay Area Annual Air Quality Report for 1980, prepared by BAAQMD for EPA, July 1981, p. 34). The standards adopted by

the CARB differ from those established in the Clean Air Act and by the Environmental Protection Agency (EPA) and reflect California's more stringent requirements on vehicular emissions (Update of "Guidelines for Air Quality Impact Analysis of Projects", BAAQMD letter from Planning Division, July 15, 1981).

The EPA has recently proposed that the allowable number of violations of the eight-hour ambient CO standard be increased from one to five per year (San Francisco Chronicle, Thursday, May 6, 1982, p.18). This would have no effect in California unless the state also relaxed its ambient standards and the CARB subsequently relaxed its vehicular emission standard.

The calculations in Table 9 were made assuming that emission factors will become more stringent in the future, as required by the CARB. As an example, if 1982 emission factors are used to calculate CO concentrations in 1987, CO concentrations would increase over those given in Table 9. The 1987 one-hour maximum concentrations would go from 15.7 parts per million (ppm) on Market St. and 12.5 ppm on Pine St. to 16.3 on Market St. and 12.6 ppm on Pine St. The 1985 eight-hour maximum concentrations would go from 7.5 ppm on Market St. and 6.9 ppm on Pine St. to 7.6 ppm on Market St. and 6.9 ppm on Pine St. California has not proposed to freeze emission factors at 1982 levels.

ENERGY

COMMENT

"Page 50 about nuclear power. It again says Washington State nuclear power plants are going to furnish the energy for these buildings. I thought they were shut down, as some of ours are. Could you find out whether they are still functioning? I would like an answer, whether if nuclear power were not available, could these buildings be provided with energy? Just a straight-out answer from PG&E." (Commission Bierman)

RESPONSE

Sentences three through six in paragraph one on p. 50 of the DEIR are deleted and replaced with the following:

Among the major new power plants expected by PG&E are the Diablo Canyon nuclear plant and the Helms Pump Storage hydroelectric plant. Both projects are expected by PG&E to have their first units come on line by January 1983 (Diablo Canyon is awaiting completion of a seismic safety study and then must receive an operating permit from the Nuclear Regulatory Commission). Unit Two of Diablo Canyon and Units Two and Three of the Helms Plant are anticipated to begin operating in mid-1983. Municipally owned utilities anticipate some supplies from the Harry Allen Nevada coal-fired plant, beginning in the late 1980's. In response to a directive of the State Public Utilities Commission, PG&E will be required to increase generating capacity from co-generation projects, which generate electricity in

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combination with industrial processes that already use fossil fuels as a source of heat. PG&E also anticipates increased purchases of electricity from other utilities. This power is expected to come from surpluses generated by hydroelectric and nuclear plants in Washington State. These surpluses are uncertain due to cancellation of two of the five Washington Public Power Supply System nuclear plants and long-term delays in a third plant, as well as increased demand for electricity in the Pacific Northwest./la/

The following footnote is inserted on p. 51 of the EIR:

/la/ Jim Davidson, Senior Civil Engineer, Generation Planning, PG&E, telephone communication, May 21 and August 3, 1982.

With the exception of Diablo Canyon, no other new nuclear power plants are proposed in California (William Stephenson, Senior Electrical Engineer, Generation Planning, PG&E, telephone communication, May 27, 1982). PG&E's planning horizon extends 20 years into the future, and includes projections of future square footages of commercial developments in the service area, including San Francisco, based on economic forecasts and forecasts of business activity. The utility does not make projections related to specific proposals, but indicates that proposed developments in San Francisco, in addition to future development throughout the service area, would not be likely to result in the need for another power plant (Hudson Martin, Supervisor, Energy Economics, Economics and Statistics Department, PG&E, telephone communication, May 27, 1982). PG&E's service area includes northern and central California, from Bakersfield to near Redding. Approximately 4.7 percent of PG&E current peak demand of about 15,900 megawatts is from San Francisco. Anticipated systemwide peak capacity in 1984 would be about 25 percent greater than systemwide peak demand (Jim Davidson, Senior Civil Engineer, PG&E, telephone communication, May 21, 1982). Increased energy consumption projected from high-rise buildings proposed in downtown San Francisco would represent approximately 0.3 percent of PG&E's systemwide demand in 1984.

COMMUNITY SERVICES (Child Care)

COMMENT

"CEQA requires you to analyze impacts of each individual project that comes before you and the end cumulative impacts of multiple projects on various city services. And among those services are the schools. And among the services that the schools provide are child care services.

"There is, once again, nothing in...this EIR....We need to have,...now that we've admitted that there are employees that need housing, we have to assume that some of those employees are going to bear children. And we have to also assume that even if it's affordable housing, both people that are parents have to work in order to even afford what is called affordable.

"We need to, have to analyze in [this] EIR...what the impacts are on the children in the school system.

"Now, there are other kinds of child care services that can be provided outside the school district. We know the school district is in desperate straits. If you read last week's Examiner, you understand what that has done to the child care services within the school district. You understand how many parents are waiting, if you read the article. If not, I will include it in testimony that I have made.

"So we need to measure not only child care services as they are applicable to the school district, but alternative ways of providing the child care, if the school district is unable to provide the necessary service.

"There are a variety of ways, and, once again, I urge you as a Commission and I urge you to urge your staff to go to people in this town that have the data now that does not have to be originally created from your staff, go to the Mayor's Committee on Child Care and the folks at Child Care Switchboard, get the data. It will be very easy, then, to include that information in the draft environmental impact reports." (Kay Pachtner. The above comments in this section were made at the public hearing for the Marathon Development Project, Second and Folsom DEIR, and were requested to be incorporated by reference for this project.)

RESPONSE

The availability of and need for child care services are social issues, which do not require coverage in environmental documents. This determination is based upon the California Public Resources Code, Section 21151 (as amended by Senate Bill 803) and Section 21060.5. Detailed discussions of child care facilities in San Francisco can be found under "Public Services" in Responses to Comments on the 201 Spear St. Office Building EIR (EE.80.337), certified May 20, 1982 and under "Community Services" on p. 186-188 of the Montgomery-Washington Building Final EIR (81.104E), certified January 28, 1982. These documents are available for public review at the Office of Environmental Review, 450 McAllister St.

ARCHAEOLOGY

COMMENT

"The Environmental Review Officer should require of the project applicant the following:

1. Archaeological Identification. This should consist of first consulting the Archaeological Information Center for San Francisco. Using the information they have, they may or may not suggest a subsurface test.
2. Archaeological Monitoring. If the project area is determined by a qualified archaeologist to be archaeologically sensitive, and nothing is known about the building site, it may be appropriate to retain a qualified professional archaeologist to monitor excavation. This way an immediate and professional evaluation of a chance find can be made with a minimum of damage to the resource." (Dr. Knox Mellon)

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RESPONSE

The subject of potential cultural and archaeological resource impacts was discussed in the Initial Study (see p. 270 of the FEIR). Because the mitigation measure noted below was included in the project, the Initial Study determined that this potential environmental impact would be insignificant and it was not addressed in the EIR. Studies prepared for the City and County of San Francisco regarding archaeological resources and architecturally and historically significant buildings were reviewed for the Initial Study. A literature search revealed that no ships are buried on the site. Similar information sources that were used for the Initial Study would be reviewed by the Archaeological Information Center for San Francisco. On sites such as that of the 388 Market St. project, permits to allow demolition of existing buildings are granted only after the certification of an EIR and the approval of other project permits, such as a Conditional Use authorization required by this project. Under such circumstances, Mitigation Measure 46 under Cultural on p. 126 of the EIR is intended to fulfill the intent of the commentor to the extent that is feasible at this time. The referenced mitigation measure provides that, "Should evidence of cultural or historic artifacts of significance be found during project excavation...the project sponsor would select an archaeologist or other expert to help the Office of Environmental Review determine the significance of the find and whether feasible measures....could be implemented to preserve or recover such artifacts."

ALTERNATIVES

COMMENT

"I would ask once again that all of the alternatives being analyzed in the Downtown EIR be included as points of orientation and be evaluated, this project evaluated against all of those alternatives." (Sue Hestor)

RESPONSE

The Downtown EIR assesses a series of alternative planning possibilities for the Downtown area and is currently in preparation. The Downtown EIR, when completed, is expected to present environmental analysis of a series of future policy options for the overall development of the Downtown. The EIR on this specific project does not, and need not, evaluate the overall downtown planning possibilities.

The alternatives chapter of the EIR discusses project alternatives which relate to existing City policies. The on-going alternative scenario analysis in the Downtown EIR covers several possible futures and encompasses numerous policies which have not yet been approved by the City. It is inappropriate to draw comparisons between existing policies and speculative future policies which may be altered or amended several times before they are proposed for approval.

D. STAFF INITIATED TEXT CHANGES

Since publication of the DEIR, a number of errors and omissions in the report have been identified. The staff-initiated text changes described below are proposed to correct these errors and omissions.

EXISTING OFFICE AND RETAIL SPACE

The following is added to the end of the third sentence on p. 27 of the EIR: "(about 68,400 gross sq. ft. of office space and 11,850 gross sq. ft. of retail space)." The following is added to the end of the fourth sentence on p. 27 of the EIR: "(about 76,900 gross sq. ft. of office space and 6,700 sq. ft. of retail space, which includes some storage area in the basement)."

APPROVAL REQUIREMENTS

The second and third sentences on p. 26 of the EIR and the third sentence of the first partial paragraph on p. 57 describe procedures for granting a revocable encroachment permit to use subsurface sidewalk space. These sentences erroneously state that the Board of Supervisors must approve an encroachment permit application and are revised to read as follows: "According to Section 310.1 of the San Francisco Building Code, the encroachment permit application would require approval from the Superintendent and City Engineer. This would occur upon recommendation from the Department of City Planning." The Board of Supervisors reserves the right to suspend or annul the privilege of using subsurface sidewalk space, or to exact a license or rental fee for the use of such space, but does not approve revocable encroachment permit applications.

INCORPORATION BY REFERENCE

The second sentence on p. 77 of the EIR is replaced with the following: "These documents are available for public review at the Department of City Planning, Office of Environmental Review, 450 McAllister St., fifth floor, and is hereby incorporated by reference into this EIR pursuant to California Environmental Quality Act (CEQA) Guidelines, California Administrative Code, Title 14, Section 15140."

MUNI FUNDING

Sentences four through seven of the last paragraph on p. 83 of the DEIR have been deleted and replaced with the following:

The San Francisco Board of Supervisors, on April 27, 1981, approved an ordinance (224-81) to assess new downtown commercial development to support Muni. The plan called for levying a one-time fee of up to \$5.00 per gross square foot upon construction of new downtown office space. The ordinance, currently in litigation, would contribute funds for maintaining and augmenting Muni transit services.

On February 1, 1982 the Board of Supervisors approved by resolution a measure declaring its intent to form a Core Area Transit Maintenance District, determining that a portion of public transit is provided Downtown in lieu of public parking places, and to impose upon real

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property within the area an annual payment for transit maintenance based on gross floor area. The project site is within the proposed district and would be subject to the legal assessment provisions finally adopted.

On July 12, 1982 the Board of Supervisors decided to postpone acting on the proposed transit maintenance assessment district until January 1983. This transit assessment district may no longer be applicable since both the Mayor and Board of Supervisors have withdrawn the proposal and the Mayor may intend to substitute an increase in business taxes. The business tax increase would be in the form of a ballot measure presented to the voters; implementation would depend on voter approval (and withstanding potential legal challenges). According to a memorandum entitled "Muni's Plans to Accommodate Downtown Growth" issued by Dean Macris, Director of Planning (August 5, 1982), Muni expects to be able to meet projected cumulative demand due to downtown office development without new City taxes.

● REGIONAL EFFECTS

The following is added after the fourth paragraph on p. 76 of the Draft EIR:

"A discussion of "Cumulative Regional Development" appears in Appendix C."

The following has been added to Appendix C after p. 217 of the Draft EIR starting on p. 302 of the Final EIR:

CUMULATIVE REGIONAL DEVELOPMENT

Projected cumulative office development in parts of the Bay Area outside of the greater downtown area may have environmental effects. Whether, where, when and in what amounts such development may occur are dependent on a number of factors outside the jurisdiction of San Francisco government agencies. Two such factors are 1) the exercise of zoning, planning and environmental review authority by other jurisdictions and 2) the rate of employment growth throughout the Bay Area.

The following information is provided to describe the possible effects of cumulative office development throughout the Bay Area, and to explain the regional government structure that exists to address those effects.

San Francisco is the center of a nine-county region which has lesser activity nodes in each of the other counties comprising the region. Recognizing the interdependence of each part of the region, local jurisdictions have entrusted regional planning, and implementation of adopted policy measures where appropriate, to regional agencies. Responsibility for the comprehensive regional plan is vested in the Association of Bay Area Governments (ABAG), the agency which forecasts regional growth. The Metropolitan Transportation Commission (MTC) is responsible for coordinating regional transit and vehicular plans and policies. The Bay Area Air Quality Management District (BAAQMD) is responsible for maintaining and improving adherence to air quality standards. These and other regional agencies coordinate their planning and implementation activities on issues of mutual concern.

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Long-range planning by the regional planning entities, and planning and implementation by operating agencies, such as the Golden Gate Bridge, Highway and Transportation District, have enabled the Bay Area to absorb the growth that occurred between 1960 and 1981. The continued effectiveness of these agencies in guiding and managing growth depends on their ability to anticipate and prepare acceptable policies for future regional needs, and on the capability of the operating agencies to implement policies.

Within this regional planning framework, development is proposed in each of the region's nine counties. The regional agencies review comprehensive plans for individual jurisdictions and large development proposals that are subject to environmental review under CEQA to determine their conformance to approved regional plans.

Regional housing projections, prepared by ABAG, are presented in Appendix C, Table C-2, (p. 175 and 299). The housing projections, and other ABAG projections of population and employment contained in Projections 79 (ABAG, January 1980), are based on assumptions concerning demographic and economic trends, local land use policies, and transportation infrastructure. Between 1980 and 1990, total Bay Area population and employment are expected to increase by 564,500 and 314,700, respectively. According to Projections 79, San Francisco resident population is expected to decline by about 9,600, and employment in the City is expected to increase by about 68,500.

The impact analysis in this report focuses on regional facility capacity available within the 1982-1990 planning horizon. Decisions as to when major capacity increases will be needed are made by implementing and operating agencies in the context of planning done by regional agencies.

The amount of physical development that can be absorbed in the Bay Area is constrained by the rate and amount of economic growth. Physical development occurs in response to perceived demand for the type of project to be built; if there is no perceived demand, physical development will not occur. For example, in the 1970s, regional shopping centers were proposed in San Mateo, Foster City and Redwood City. Only San Mateo's Fashion Island was built, because the central Peninsula could support only one additional regional shopping center in the contextual time frame.

Similarly, market forces limit the amount of office space that can be occupied in the Bay Area during a given forecast period because the demand for office space is finite. The amount of office space that can be occupied in the region during this decade is limited by many factors, particularly regional employment growth, which determines demand for office space.

This relationship is important to the understanding of the potential amount of office space in San Francisco and the region; office space accommodates employment, it does not create it. If a large amount of speculative office space were to be built in Oakland, given the projected level of regional employment growth, it would satisfy a portion of the regional demand. The reduction in unmet demand could be accompanied by a lessening in the rate of development, an increase in the amount of vacant space, or both. Not all of the proposed office space in San Francisco,

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for example, would be built or, if it were built, it would not be fully occupied. (This effect would be limited somewhat by demand for space at the local level, e.g., all companies desiring San Francisco office space would not necessarily be satisfied by office space in Oakland.) Vacant office space would not have physical environmental impacts. This report contains a worst-case analysis of cumulative development for downtown San Francisco because it assumes that all projects that are under formal review, approved, and under construction in downtown San Francisco would be built and fully occupied.

Employment growth will be distributed throughout the Bay Area where facilities to accommodate that growth -- including transit systems, infrastructure improvements, office space and housing -- exist, are used most efficiently, or are constructed.

PEDESTRIANS

The phrase "per foot of effective sidewalk width" is deleted from the first sentence on p. 45 of the EIR and the first sentence of the second paragraph on p. 95 of the Draft EIR and p. 92 of the Final EIR. The following sentence is added to the end of the second paragraph on p. 92 of the Final EIR: "A detailed breakdown of cumulative pedestrian impacts is contained in Appendix D, Table D-10."

The following Table D-10 is added after p. 226 of the Draft EIR as p. 323 of the Final EIR.

Footnote /10/ on p. 100 of the Draft EIR is replaced with the following:

/10/ See Appendix D, Table D-11: Pedestrian Flow Regimen, for a description of pedestrian capacities.

● TABLE D-10: CUMULATIVE PEDESTRIAN IMPACTS ON ADJACENT SIDEWALKS*

Sidewalk	Effective Width	Pedestrian Volumes **			Pedestrian Flow Rates***			Percent of Capacity Used****		
		Existing	w/o Project	Cumulative + Project	Existing	w/o Project	Cumulative + Project	Existing	w/o Project	Cumulative + Project
Front St.	10 ft.	37	90	90	3.7	9.0	9.0	20	50	50
Market St.	18 ft.	28	96	100	1.6	5.3	5.5	10	30	30
Pine St.	8 ft.	8	11	12	1.0	1.4	1.5	10	10	10

* 101 California St. will be the major source of cumulative pedestrians that will impact sidewalks adjacent to the project. The paths that these pedestrians will use was projected using paths that seem most probable. The actual sidewalk conditions resulting from cumulative development would not be qualitatively different from the sidewalk conditions represented in this table.

** Persons per minute.

*** Persons per effective foot of sidewalk width per minute.

**** Rounded to nearest 10%; maximum capacity is 18 persons per effective foot of width per minute.

SOURCE: Analysis performed by Environmental Science Associates, Inc., following methods described in the book Urban Space for Pedestrians, by Boris Pushkarev and Jeffrey Zupan.

The following Table is added to Appendix D of the EIR:

● TABLE D-11: PEDESTRIAN FLOW REGIMEN

FLOW REGIME	CHOICE	CONFLICTS	FLOW RATE (P/F/M)*	
			Average	Percent of Capacity Used
Open	Free Selection	None	0.5	0.0-3.0
Unimpeded	Some Selection	Minor	0.5-2	3.1-11.0
Impeded	Some Selection	High Indirect Interaction	2-6	11.1-33.0
Constrained	Some Restriction	Multiple	6-10	33.1-56.0
Crowded	Restricted	High Probability	10-14	56.1-78.0
Congested	All Reduced	Frequent	14-18	78.1-100.0
Jammed**	Shuffle Only	Unavoidable		above 100.0

* P/F/M = Pedestrians per foot of a effective sidewalk width per minute.

** For Jammed Flow, the (attempted) flow rate degrades to zero at complete breakdown.

SOURCE: Urban Space for Pedestrians, Boris Pushkarev and Jeffrey Zupan, MIT Press, 1975, Cambridge, MA.

● PARKING

The Draft EIR discussed the gross parking demand and deficit, but did not include the net demand and deficit. Changes noted below provide this information.

The third sentence in the first full paragraph on p. 4 of the EIR has been reworded: "The project would generate a gross demand for about 410 parking spaces and a net demand for about 185 spaces; about 40 existing parking spaces would be removed and about 47 new spaces provided as part of the project."

The following sentence has been added at the beginning of the first paragraph on p. 46 of the EIR: "The 340 Market Street building on the site has a subsurface parking garage containing about 40 long-term parking spaces."

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A sentence has been added at the beginning of the last paragraph on p. 95 of the Final EIR to read: "Construction of the project would result in the demolition of the subsurface parking garage, containing about 40 long-term spaces, under 340 Market Street."

The first sentence of the second paragraph on p. 96 of the Final EIR has been revised to read: "The proposed building would create a gross parking demand for about 345 long-term spaces and 65 short-term spaces, and a net parking demand for about 180 long-term and 5 short-term spaces."

The last sentence in the second paragraph on p. 96 has been reworded: "Overall, there would be a net deficit of about 225 parking spaces, including removal of the existing 40-space garage."

● CUMULATIVE LIST

Since publication of the Draft Summary of Comments and Responses on September 15, 1982, the cumulative list of buildings in Tables D-6 and D-7 on pp. 43-46 of the Comments and Responses document has been updated by the Department of the City Planning on pp. 195-198 and pp. 313-316 of this FEIR.

The Cumulative Office and Retail Development list, if updated to November 5, 1982, would include the following additional developments: A/B 3717, 123 Mission, 342,800 sq. ft.; A/B 3750, Second and Harrison, 228,000 sq. ft.; A/B 3735, Planter's Hotel conversion, 20,000 sq. ft.; A/B 738, One Flynn Center, 25,000 sq. ft.; A/B 768, Franklin and McAllister, 53,600 sq. ft.; A/B 3750, 642 Harrison, 45,900 sq. ft.; A/B 3794, 155 Townsend, 19,000 sq. ft.; A/B 143, 1000 Montgomery, 39,000 sq. ft.; A/B 141, 100 Broadway, 13,000 sq. ft.; A/B 110 Embarcadero Terraces, 142,000 sq. ft.; A/B 176, 900 Kearny, 25,000 sq. ft.; A/B 3763, 400 2nd at Harrison, 49,500 sq. ft.; and A/B 3788, 640 2nd St., 37,400 sq. ft. The 1049 Market (108,000 sq.ft.) and Greyhound Bus Terminal (100,000 sq.ft.) projects would be removed from the updated list. Both developments have been withdrawn from consideration by their sponsors. In addition, the square footage analyzed for the Ferry Building in the list used in the Draft EIR was high and should be reduced by 173,000 sq. ft. of office space and 15,000 sq. ft. of retail space.

Most of these revisions have occurred since the analysis for the Summary of Comments and Responses was prepared. If the totals were adjusted to make these changes, net new office square footage would increase by about 0.6 million and retail square footage would remain about the same. As the analysis methodologies are accurate only to +10-15%, a change of 0.6 million gross sq. ft. (4%) would not change the results presented in the EIR.

ENERGY

Insert "/1a/" after the second sentence on p. 106 of the EIR and insert the following after footnote/1/ on page 113: "/1a/ The project was compared with 333 California St., a mixed-use commercial/residential building on which the project engineers also worked. The trace run for the 333 California St. project was carried out on August 11, 1981".

Insert the following as new paragraph after the first paragraph on p. 113:

The project and other office development under review, approved, or under construction in downtown San Francisco (see Appendix D, Table D-6, pp. 313-315 of this document, for a list of projects) would increase electricity consumption by about 260 million kilowatt-hours per year and would increase natural gas consumption by about 403 million cubic feet per year for building operations. Transportation associated with this cumulative office development would increase diesel fuel consumption by about 1.3 million gallons per year, would increase gasoline consumption by about 8.8 million gallons per year, and would increase electricity consumption by about 52 million kilowatt-hours per year (see Table 12a). The total increase in energy demand would be about five trillion Btu annually, equivalent to about 880,000 barrels of oil per year.

Cumulative office development under review, approved, and under construction in downtown San Francisco, which is included in PG&E's projections/^{3/}, would increase PG&E's current systemwide electrical load of 79,579 billion watt-hours per year by about 0.3%. PG&E is planning for an 11% increase in this load by 1990; this is an average increase of about 1.2% per year.^{4/} Additionally, PG&E is projecting reserve margins (excess capacity) of 20 to 30 percent over the next ten years.^{4/} Thus, the cumulative office development would not alter PG&E's short-range plans.

Add the following footnotes to the Notes: Energy on p. 113 of the EIR:

/3/ Jim Davidson, Senior Civil Engineer, Generation Planning, Pacific Gas and Electric Company; telephone communication, May 21, 1982.

/4/ Pacific Gas and Electric Company, March, 1982, Forecast of the Demand for Electricity Within the PG&E Service Area, 1982-2002.

Insert Table 12a after p. 113 of the EIR.

TABLE 12a: ESTIMATED ANNUAL CUMULATIVE ENERGY CONSUMPTION

	Units of Energy (in Millions)	At-Source Resource Use (Billions of BTU)*	Barrel Oil Equiv. BBL. OIL (in Thousands)
<u>Commercial Buildings</u>			
Electricity	260 KWH	2,660	450
Natural Gas	403 cu. ft.	443	75
<u>Transportation</u>			
Diesel	1.3 gal.	210	35
Gasoline**	8.8 gal.	1,200	210
Electricity	52 KWH	<u>532</u>	<u>90</u>
	TOTAL	5,045	860

*1 KWH = 10,239 at-source BTU

1 cubic foot = 1,100 at-source BTU

1 gallon = 140,000 at-source BTU

1 BBL. Oil = 5.88 million at source BTU.

**for vehicular trips generated by the project

SOURCE: Environmental Science Associates, Inc.

● SIGNIFICANT ENVIRONMENTAL EFFECTS

Chapter VI on pp. 128-129 of the DEIR has been replaced with the following:

VI. SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED IF THE PROJECT IS IMPLEMENTED

This chapter covers significant impacts described in Chapter IV, Impacts, pp. 55-117, that would occur regardless of whether or not mitigation measures described in Chapter V, Mitigation, pp. 118-127, are implemented.

CUMULATIVE OFFICE DEVELOPMENT

As part of a trend of denser development in Downtown San Francisco, the project would contribute to cumulative traffic increases Downtown and cumulative increases in passenger loadings on BART, Muni and other transit agencies.

- E. Addendum to Summary of Comments and Responses document (November 18, 1983)

INTRODUCTION

This document contains summaries of public comments on the Draft Summary of Comments and Responses for the 388 Market Street Building Environmental Impact Report, and responses to those comments.

All substantive spoken comments made at a public hearing before the City Planning Commission on November 4, 1982 have been reviewed and are presented herein by direct quotation, edited for repetition and nonsubstantive material only.

Comments and responses are grouped by subject matter and have generally been arranged by topics corresponding to the Table of Contents in the Draft. Each group of comments is followed by its set of responses; the order of the responses under each topic follows the order of comments under that topic.

These comments and responses are incorporated into the Summary of Comments and Responses dated September 15, 1982 as a new chapter. Text changes resulting from responses to comments are also incorporated into the Final EIR, as indicated in the responses.

SUMMARY OF COMMENTS AND RESPONSES

Office Space Table

COMMENTS

"Page 14 is a table. It's Table C-1, 'Major Office Building Construction in San Francisco Through 1981, in Gross Square Feet.' ... What concerns me is that the bottom of the page, there's one column that says '5-Year Annual Average.'... In the five-year annual average column we have a figure 2,156,500, with a little 'd' afterward, and when you look up (d), you find yes, that's a two-year average. I think you should have figured that -- and then if you are going to put it in the five-year column, give a projection of what the five years would be, or don't even put it in this figure. Because if you take that two years -- is 2,156,000 -- and then you double that, which would make maybe four years, you get up to five, and then you take one more year -- maybe half of that -- you get 5,391,250 as some kind of a possible estimate of what we're talking about." (Commissioner Bierman)

RESPONSE

Table C-1 on pp. 14-15 of the Comments and Responses document and pp. 214-215 of the DEIR has been replaced with the following table as pp. 166-167 and pp. 297-298. Footnote (d) has been eliminated and the two-year averages and totals have been explicitly indicated on the table.

Table C-1 is intended to show the historical amount of office space that has been constructed in San Francisco. The office space that is under construction, approved, and under formal review is contained in Tables D-6 and D-7, pp. 195-198. The Employment Trends analysis on pp. 201-205 does include projections of additional office occupancy. Precise annual projections of office space completion are not possible because a simple extrapolation may not be accurate.

Traffic Mitigation

COMMENTS

"Page 38. It says, 'The following Mitigation Measures that could be implemented by other agencies have been added following mitigation 19.' And then the end of Paragraph 19A says, 'These changes may not be desirable as the traffic currently turning left would redistribute to other intersections, thus adding travel on the street system.'"

It's talking about Beale Street and a left turn, and connecting with the freeway. It is, in my view, an almost unbelievable mitigation suggestion, because it's the way that most of the traffic coming from the east -- some of the Financial District and certainly all the new buildings south of Beale Street -- comes on Mission, or most of it comes on Mission and turns left onto that freeway. ...I don't think we ought to be calling that a mitigation. I think mitigations are supposed to be desirable and helpful, and not sort of mess up the traffic situation on Mission, which is a transit street."
(Commissioner Bierman)

RESPONSE

The last sentence of Mitigation Measure 19A on p. 38 of the comments and responses document is replaced with the following: "Another effect of this measure would be to cause traffic currently turning left to redistribute to other intersections."

The mitigation measures 19A and 19B are suggested only as possible solutions. The Department of Public Works and Caltrans would have to study the two intersections and develop detailed plans prior to any changes being made. These agencies would determine whether such intersection changes would be adverse or whether traffic redistribution would make more efficient use of the street system. Changes at other intersections may be necessary to accommodate the redistributed traffic.

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The two suggested measures would allow the signal timing at each intersection to be modified to better match the demand. If the Level of Service at both of the intersections could be improved, Muni operations would be improved, as intersection delay would be reduced. Prohibition of left turns at either intersection would require vehicles currently making left turns to use other routes. As most of the left-turning vehicles on Mission at Beale Street use the on-ramp, these vehicles would likely redistribute to other on-ramps further to the south (which would reduce vehicle volumes on Mission St., thus improving transit operating conditions), such as First and Harrison Streets to the Bay Bridge, and Fourth and Harrison Streets to the James Lick - Bayshore Freeway. Collectively, motorists will make shortest travel-time calculations as to which alternative route is most effective and the traffic will be distributed to make efficient use of all available roadways.

Muni Load Factors

COMMENT

"On Page 40 is the thing I have the most concern about. It's the tables about Muni. ... In this table, as existing condition, for the J they have 0.84, which means that at the peak hour there is room for people to stand. It is not a jammed condition, and it is not full to capacity. It has .96, which means that the K, L, M and N are not jammed. They are jammed at the peak hour, and so I just don't believe these figures. ... The way the table reads, it means they are not at 150 percent of the capacity, and I now every time I ride them at the peak hour they are.... So I don't think that we are getting a true picture of what the problem is in these tables." (Commissioner Bierman)

RESPONSE

The load factor on the metro lines (J, K, L, M, N) has been calculated based upon 220% of seated capacity (i.e., 68 seats and 82 standees for a total capacity of 150 riders per car). The existing load factors and ridership shown in Table D-4 were compiled by the OER from Muni load checks. The load factors are an average of the three most recent schedule checks for each Muni route.

Footnote "*" of Table D-4 on P. 40 of the Comments and Responses document has been replaced with the following:

*The load factor is the ratio of ridership to existing capacity, where capacity is calculated from the recommended maximum seated and standing loading of the transit vehicles. This is 150% of seated capacity, except for LRV's where maximum is 220% of seated capacity. As estimates of load factors, these should be regarded as approximate. Muni cordon points, where the ridership and capacity counts were made, do not necessarily correspond precisely to the point of maximum loading on each line. The future load factors have been calculated using existing capacity and do not include any proposed capacity increases.

A load factor of 0.96 for the K, L, M, and N lines means that averaged over the peak hour, only 4% of the total capacity of the lines was available. On a per-car basis this corresponds to 6 persons per LRV. As the data is averaged over an hour, the available capacity would most likely occur towards either end of the peak hour. Individual LRV observations during the peak of the peak (see Figures D-1, D-2, and D-3, pp. 305-307) would not show the excess capacity shown in the load factor calculations. One would have to observe each car of each train for an hour to arrive at the data shown in the load factor calculations. Conditions on Muni at the height of the peak-hour are higher than shown for the average of the peak hour in Table D-4.

Cumulative Development

COMMENT

"On Page 45 it talks about not using any figures for the YBC proposal.... We know that between Third and Fourth and Mission and Howard and ... Folsom, we are going to have a massive project. I don't think that we can pretend we don't have anything to go on to make some kind of judgment about it."
(Commissioner Bierman)

RESPONSE

As stated on page 46 of the Comments and Responses document, the cumulative list does contain "... all office projects in redevelopment areas that are under construction or for which Land Disposition Agreements have been approved." The projects included are the National Maritime Union, Block 3751, 80,000 sq. ft.; Office Building, SB-1, Block 3752, 11,000 sq. ft.; Yerba Buena West, Block 3742, 300,000 sq. ft.; and Convention Plaza, Block 3735, 339,000 sq. ft.

Actions by the City Planning Commission approving Redevelopment Area Plans constitute approval of a general plan with a range of permitted uses and floor areas but no precise floor area figures for each parcel. These are determined by the Redevelopment Agency in negotiations with accepted developers. Thus negotiations are presently under way with a developer for the central blocks of Yerba Buena Center. Unless and until the negotiations are completed and a Land Disposition Agreement (LDA) is made, there are no floor area figures, by type of use, for those blocks that would be comparable with those included in the list used in the cumulative analysis.

Although a maximum limit on development has been established in each redevelopment area, there is not enough information about proposals which have not obtained an LDA to provide reasonably accurate calculations of cumulative impacts comparable to those based on the cumulative project list. If the maximum amount of office space permitted by the YBC plan were included, however, the cumulative total for projects under review would be increased by 1.9 million square feet, or 11%. It should be noted that the maximum floor area permitted in a redevelopment area by an approved Redevelopment Plan, like the maximum floor area allowed in a zoning district by a zoning ordinance is seldom, if ever, attained. It

IX. Summary of Comments and Responses

would be unreasonable to suggest that all the potential floor area permitted by commercial zoning districts in San Francisco be counted in the cumulative list for analysis in a single-project EIR.

Retail Space

COMMENT

"Page 52, it talks about again separating p.m. figures, and not talking about shopping along with commuters. I just think we ought to quit looking at them as separate, because they are all on the same bus, and we can't separate out who was shopping and who was at their office." (Commissioner Bierman)

RESPONSE

The discussion on p. 204 explains why the p.m. peak is more useful to analyze than the a.m. peak. The main reason why the p.m. peak is analyzed is because more travel occurs then than during the a.m. peak. Shopping and pleasure trips do contribute to the p.m. peak that is analyzed in the EIR. The cumulative development analysis has considered 0.5 million gross sq. ft. of retail space proposed to be built in conjunction with office buildings as shown in Table D-5A on p. 194 and discussed in relation to projected travel demand on p. 184.

Ferry Service

COMMENT

"(There)... is this presumption for Marin that suddenly the solution is going to be a new ferry boat. I would really like it answered by the next time as to who says there's going to be a ferry boat. Is it a staff wish? Is it Golden Gate Board policy? Because as recently as six months ago they were going to undo the whole ferry system." (Commissioner Bierman)

RESPONSE

Golden Gate Transit is currently operating only two of the three Larkspur ferries. The proposal for future ferry service improvements involves converting all three Larkspur ferry boats from gas turbine to diesel engines and using all three ferries on the Larkspur/San Francisco route. The district would be adding an additional ferry boat to the two it now has in operation but would not have to purchase an additional ferry boat to do this as it currently has one ferry in reserve. This information was provided by Golden Gate Transit (see footnote /5/ on p. 189. The addition of the third ferry is also discussed in the "Five Year Transit Development Plan" (1982-1987) for the Golden Gate Transportation District.

STAFF-INITIATED TEXT CHANGESTransit Ridership Table

Typographical errors in Table D-8 on p. 50 of the comments and responses document have been corrected. Table D-8 on p. 202 in the Summary of Comments and Responses has been replaced.

Typographical Errors

The following typographical errors in the Draft Summary of Comments and Responses have been corrected:

Page 10, delete the first reference to "Commissioner Bierman".

Page 21, delete the first reference to "Tony Kilroy".

Page 24, delete the first reference to "Tony Kilroy".

Page 35, the first full paragraph, change "paragrph" to "paragraph".

Page 55, delete the first reference to "Commissioner Nakashima".

The next to last line on p. 73 of the Draft EIR, change "0.9" to "0.09."

- Page 100, footnote /8/, change "Cahradnik" to "Zahradnik." (This footnote has been replaced in the Final EIR; see pp. 189-190.)

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● XII. CERTIFICATION MOTION

File No. 81.195E
Motion No. 9596M

CERTIFICATION MOTION

ADOPTING FINDINGS RELATED TO THE CERTIFICATION OF AN ENVIRONMENTAL IMPACT REPORT FOR A PROPOSED OFFICE/COMMERCIAL STRUCTURE LOCATED AT 388 MARKET STREET.

Moved, that the San Francisco City Planning Commission ("Commission") hereby certifies the Environmental Impact Report ("EIR") identified as "388 Market Street Building," case file no. 81.195E, (the FEIR) based upon the following findings:

1. The City and County of San Francisco, acting through the Department of City Planning ("Department") fulfilled all procedural requirements of the California Environmental Quality Act (Cal. Pub. Res. Code 21000 et. seq., "CEQA"), the State CEQA Guidelines (Cal. Admin. Code Title 14, 15000 et. seq., "CEQA Guidelines") and Chapter 31 of the San Francisco Administrative Code ("Chapter 31").

a. The Department determined that an EIR was required and provided public notice of that determination by publication in a newspaper of general circulation on November 13, 1981.

b. On April 2, 1982, the Department published the Draft EIR (DEIR) and on April 9, 1982 provided public notice in a newspaper of general circulation of the availability of the DEIR for public review and comment and of the date and time of the City Planning Commission public hearing on the DEIR; this notice was mailed to the Department's list of persons requesting such notice.

c. Notices of availability of the DEIR and of that date and time of the public hearing were posted near the project site by Department staff on April 9, 1982.

d. On April 2 and April 9, 1982, copies of the DEIR were mailed or otherwise delivered to a list of persons requesting it, to those noted on the distribution list in the DEIR, to adjacent property owner, and to other government agencies, the latter both directly and through the State Clearinghouse.

e. Notice of completion was filed with the State Secretary of Resources via the State Clearinghouse on April 2, 1982.

2. The City Planning Commission held a public hearing on the DEIR on May 13, 1982, at which opportunity was given for, and public comment received on, the DEIR.

3. The Department prepared responses to comments on environmental issues received at the public hearing and in writing during the public review period, prepared additions to the text of the DEIR in response to comments received or

CITY PLANNING COMMISSION

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based on additional information that became available during the public review period, and corrected errors in the DEIR. This material was presented in a "Draft Summary of Comments and Responses," published on September 20, 1982, was distributed to the Commission and to all parties who commented on the DEIR, and was available to others upon request at Department offices.

An addendum to the "Draft Summary of Comments and Responses," containing additional staff suggestions for revisions and corrections to the DEIR was published on October 28, 1982, and was distributed as above.

On November 4, 1982, the Commission reviewed the DEIR, Draft Summary of Comments and Responses and addendum thereto as the proposed final EIR ("FEIR") and requested additional information on transportation and on cumulative development, which information was provided on November 17, 1982.

An additional 10-day opportunity for public comment was made available from November 19 through 30, 1982, with public notice of this additional public comment period provided by advertising in a newspaper of general circulation on November 19, 1982, by posting a notice at and near the project site, and by mailing said notice to the Department's list of persons requesting such notice. No comments were received as a result of this additional public comment period; however, staff of the Department prepared clarifications and corrections to the Summary of Comments and Responses, covering cumulative development and errata, during and after the comment period, which were provided on December 22, 1982 to the Commission and to all parties who commented on the DEIR, and was available to others upon request at Department Offices.

All of the responses and comments in combination with the additional information described above and the DEIR, are proposed by the Department as the Final EIR ("FEIR").

4. The project EIR file, identified as 81.195E 388 Market Street Building, has been available for review and inspection by the Commission and the public and is part of the record before the Commission.

5. On January 6, 1983 The Commission again reviewed the proposed FEIR dated January 6, 1983, and finds that the FEIR is adequate, accurate and objective and certifies that it was completed in accordance with CEQA, the CEQA Guidelines and Chapter 31.

6. The following environmental effects, some of which are listed in the DEIR as unavoidable impacts, are found to be insignificant environmental effects for reasons set forth below:

a. Energy. The FEIR documents the fact that the project, when completed, will consume approximately the same amount of energy as the existing structure. Accordingly, it will not have a significant impact on energy resources.

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b. Construction Noise. The FEIR documents the fact that project construction activities will meet requirements of the City Noise Ordinance. Noise from pile-driving, which is of particular concern, is a short-term, temporary effect that the FEIR estimates will last about four weeks. Therefore, construction noise will not have a significant environmental effect.

c. Employment. Employment is not a physical environmental effect under CEQA. The project would replace the existing 600 on-site jobs with about 980 new jobs, a net increase of about 380 permanent jobs in downtown San Francisco. Thus, the net increase in on-site employment opportunities will have a beneficial effect in light of the high national, regional and local unemployment rate.

d. Shadows. With the exception of the new shadow caused by the project which would interfere with a narrow corridor of sunlight on the public plaza surrounding the 101 California Street building (now under construction) during early afternoon in winter months, the FEIR shows that the remaining project shadows coincide with shadows from existing high-rise buildings in the area or fall on City streets and that the project would cast no new shadows on the Mutual Benefit Life Building plaza. The Commission finds that the limited shadow effect on the 101 California Street plaza is not a significant environmental impact and further finds that all other new shadows cast by the project will have an insignificant impact on the environment in that they will not shade sensitive public areas.

e. Air Quality. The FEIR documents the fact that Federal and State air emissions limitations and programs established for the Bay Area Air Quality Management Plan are projected to improve Bay Area air quality, according to calculations and methodologies established by the Bay Area Air Quality Management District and the California Air Resources Board. The FEIR also notes that overall air quality in San Francisco and the Bay Area has been improving during the last decade. Therefore, increased automobile traffic caused by the project and by cumulative office development proposed and approved in the downtown area is not expected to have a significant effect on air quality, nor result in significant increases in the frequency of violations of State, Federal or local air quality standards. Moreover, policies of the Transportation Element of the San Francisco Master Plan, as amended, discourage the use of private automobiles and promote transit use, thereby further reducing the potential for air quality impacts.

7. Based on the information in the FEIR, the Commission finds that the proposed project and Alternative 7, described in the FEIR, will have identical environmental effects. The Commission further finds that the project and Alternative 7 will have significant environmental effects in that they will cause an increased demand for parking spaces in the downtown area and will, in combination with other office projects proposed and approved for the downtown area, contribute to cumulative impacts on transit, parking and vehicular traffic in the downtown area and the region.

CITY PLANNING COMMISSION

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8. As an employment generator, the office portion of the project would have an effect on demand for dwelling units in the city, which the Commission considers to be a significant effect.

9. The Commission agrees with the Department's findings of insignificance for those impacts so identified in the initial study. The Commission further finds that those impacts discussed in the Environmental Impacts Chapter of the FEIR, which are not specifically set forth herein, will have no significant effect on the environment based on information and analysis set forth in the FEIR.

I hereby certify that the foregoing Motion was ADOPTED by the City Planning Commission at its regular meeting of January 6, 1983.

Lee Woods, Jr.
Secretary

AYES: Bierman, Karasick, Klein, Kelleher, Nakashima

NOES: None

ABSENT: Rosenblatt, Salazar

PASSED: January 6, 1983

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APPENDIX A: FINAL INITIAL STUDY*

388 MARKET STREET

SAN FRANCISCO

81.195E

November 1981

* Differences among data presented in the following Initial Study and the preceding Focused EIR are attributable to the fact that the proposed project has since been modified and to the availability of additional and more precise data during the subsequent preparation of the EIR.



DEPARTMENT OF CITY PLANNING

100 LARKIN STREET - SAN FRANCISCO, CALIFORNIA 94102

(415) 552-1134

NOTICE THAT AN ENVIRONMENTAL IMPACT REPORT IS DETERMINED TO BE REQUIRED

Date of this Notice: November 13, 1981

Lead Agency: City and County of San Francisco, Department of City Planning
100 Larkin Street, San Francisco, CA. 94102

Agency Contact Person: Paul Rosetter

Tel: (415) 552-1134

Project Title: 81.195E
388 Market Street Building

Project Sponsor: Honorway Investment Corp.

Project Contact Person: Kwan So

Project Address: 388 Market St. 300 block of Market St. between Pine and Front Sts.

Assessor's Block(s) and Lot(s): Assessor's Block 265, Lots 1 and 2

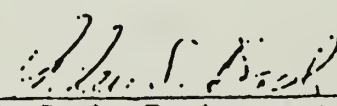
City and County: San Francisco

Project Description: Demolish two buildings and construct a 29-story, 400-foot building containing a total of about 401,000 sq. ft., including approximately 225,000 sq. ft. of offices, 32,000 sq. ft. of retail area and 90 residential units; providing about 80 parking spaces on 3 basement levels; requiring Conditional Use and Discretionary Review.

THIS PROJECT MAY HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT AND AN ENVIRONMENTAL IMPACT REPORT IS REQUIRED. This determination is based upon the criteria of the Guidelines of the State Secretary for Resources, Sections 15081 (Determining Significant Effect), 15082 (Mandatory Findings of Significance) and 15084 (Decision to Prepare an EIR), and the following reasons, as documented in the Environmental Evaluation (Initial Study) for the project, which is attached.

Deadline for Filing of an Appeal of this Determination to the City Planning Commission: November 23, 1981.

An appeal requires 1) a letter specifying the grounds for the appeal, and 2) a \$35.00 filing fee.


Alec S. Bash, Environmental Review Officer

388 MARKET STREET BUILDING

INITIAL STUDY

81.195E

PROJECT DESCRIPTION

The project is a 29-story combined office and condominium residential building proposed to be located on the triangular block bounded by Market, Pine and Front Sts. The site contains 18,360 square feet (sq. ft.), approximately four-tenths of an acre, and includes the two lots which comprise Assessor's Block 265.

The project site is adjacent to the Embarcadero Station of the Market St. subway. It contains two structures. Both buildings are in commercial use and would be replaced by the proposed project. The building at 320 Market St. is a nine-story structure (112 ft. tall), with a drug store occupying the ground level and eight floors of office space above. The 340 Market St. building is an eight-story structure (97 ft. tall) with a subsurface parking garage. A savings bank and men's clothing store occupy the ground floor; the remaining seven floors are in office use.

North of the project site, the 48-story 101 California St. office building is under construction. Existing buildings immediately adjacent to the site are the 100 and 111 Pine St. buildings, the 444 Market St. Building, One Metropolitan Plaza (425 Market St.), 333 Market St., the Pacific Gas and Electric Company Building (77 Beale St.) and the Mutual Benefit Life Insurance Building (see Figure on following page).

The proposed project would be a 400-foot high, 29-story mixed-use office/residential building combining the following features:

- Three levels of subsurface parking (about 65,400 sq. ft., containing about 80 parking spaces) and two truck loading docks, accessible from Front St.;

- Two levels of retail space with separate lobby and elevator access to the residential and office portions of the building. The combined ground-floor and second-floor mezzanine retail space would total about 32,000 sq. ft.;
- Fifteen stories of office space (about 225,000 sq. ft.), with an average per-story gross floor area of about 15,000 sq. ft.;
- Ten stories of market-rate condominiums (about 144,000 sq. ft. of residential space with approximately 90 dwelling units);
- Two levels of mechanical/building-service space. This space would consist of a mechanical service area on the floor between the office and residential use, and an additional mechanical floor above the condominium units.

Gross floor area of the lobby, retail and office space would be approximately 257,000 sq. ft., representing a Basic Floor Area Ratio (FAR) of 14:1. Housing would be provided at the rate of 640 sq. ft. of residential per 1,000 sq. ft. of office. The FAR represented by the residential portion of the project is approximately 7.8:1. A recreational facility, such as a health club, would be provided for project residents on the mechanical floor between the office and residential uses. A portion of the mechanical equipment floor to be located above the residential units would be devoted to an observation deck. There would be a rooftop garden which would serve as a common open space area for the building occupants.

The building base would be triangular in form. A setback above the second floor, at a height of about 40 ft., would be provided to define the building base; the setback would be about 50 ft. in depth at the corner of Market and Front Sts. Above this setback the project tower would be tear-shaped. A rounded, semi-circular frontage would be located along Front St. The building would narrow approaching the intersection of Pine and Market Sts. with the "prow" oriented towards the foot of Market St. The maximum diagonal dimension of the tower would be about 220 ft. Project design would feature two major building entrances to facilitate shortened walking distances, and separate

access to the residential and office portions of the building. Landscaped open space would be located at each corner of the building and at the building entrances. The project would provide direct access to the Embarcadero Station of the Market St. subway.

The site is in the C-3-0 Use District and the 600-I Height and Bulk District. The allowable Basic FAR for the site is 14:1. The use of floor area bonuses applicable to the project would permit an additional 89,400 sq. ft. of floor area, exclusively for residential use. These bonuses would increase the allowable FAR by about 4.9:1, resulting in a total allowable FAR of about 18.9:1. The total gross floor area proposed for the building of approximately 401,000 sq. ft., represents an FAR of about 21.8:1. Although the building would be 200 ft. shorter than allowed in this Height District, the proposed FAR exceeds the total permitted FAR by about 3:1, so the project could not be approved by the City Planning Commission without amendments to the City Planning Code.

PROJECT CONTEXT AND OBJECTIVES

The project sponsor is Honorway Investment Corporation, a California corporation. The project sponsor has proposed more housing than would be permitted under the bonus provisions of the City Planning Code. The amount of housing proposed is based upon the sponsor's perceptions of evolving City policy.

On April 9, 1981 Mayor Dianne Feinstein submitted to the City Planning Commission an action program to encourage the development of new housing in the City. The Mayor's action program advocated mixed-use residential/office building development in the downtown and asked the Department of City Planning to create a set of permanent incentives to encourage housing by providing bonuses in floor area ratio and height in exchange for more housing. The Mayor also requested that the Department prepare an ordinance requiring developers to provide a specific ratio of housing to office development and that consideration be given to the possibility of floor area bonuses.

Guiding Downtown Development, prepared by the Department of City Planning in May 1981, is a report containing a series of regulatory proposals for managing development in downtown San Francisco. This document states that, for major office buildings, development of new housing should be required in proportion to the amount of commercial office space. The recommended housing requirement would be 640 sq. ft. of housing for every 1000 sq. ft. of office space. Under the FAR limitations of Guiding Downtown Development, in the C-3-0 District, floor area bonuses of up to about 417 sq. ft. of housing for every 1000 sq. ft. of permitted office space would be allowed to be constructed on-site (maximum base FAR 12:1, bonus FAR for housing 5:1, 5 divided by 12 = 0.417). The remainder of the proposed housing requirement would have to be provided off-site or by reducing the commercial floor area of the building.

To date, no ordinance has been adopted implementing the provisions of the Mayor's action program or the Department of City Planning's Guiding Downtown Development. The City Planning Commission has, however, been requiring the provision of specified numbers of units of housing under its discretionary review powers. In the absence of ordinance requirements for the provision of housing and desiring to meet the objectives of the Mayor's action program, the project sponsor has proposed housing at precisely the ratio of 640 sq. ft. of housing for every 1000 sq. ft. of proposed office space as recommended in Guiding Downtown Development. Because of the size of the proposed condominiums, the number of residential units provided by the project would be fewer than indicated by the housing formula contained in Guiding Downtown Development.

POTENTIAL ENVIRONMENTAL EFFECTS

Potential environmental issues resulting from the proposed project include: circulation requirements and effects on existing vehicular and transit systems, on pedestrian ways, and on parking; urban design considerations and shadow effects; housing impacts generated by increased employment and provision of residential use on-site; noise impacts of pile driving during construction; wind effects; air quality impacts associated with carbon monoxide emissions from project-generated traffic; subsurface geologic

conditions; effect on the City's emergency response plan; energy consumption; and growth inducement. These issues, as well as necessary modifications to the City Planning Code which would be required for project approval, and the implications of such modifications, will be analyzed in detail in subsequent environmental documentation for the project. Potential environmental issues associated with the project that were determined in this Initial Study to be insignificant, and therefore will not be addressed in subsequent environmental documentation, are described below.

Land Use Compatibility: The project would be similar to existing and proposed land uses in the vicinity of the site except for the on-site provision of housing which is in general compliance with evolving City policy.

Noise: After completion, operation of the project, project-generated traffic, and traffic from cumulative development would not increase audible noise levels in the project vicinity. Noise insulation features would be included in the project design to comply with residential noise standards of Title 25 of the California Administrative Code.

Construction-related Air Quality: Construction activities would not increase the frequency of violations of air quality standards as monitored by the Bay Area Air Quality Management District. Violations of particulate standards are likely near the site. See page 27 for measures which would reduce temporary particulate emissions during construction.

Public Services and Utilities: The increased demand for public services and utilities attributable to the project, and cumulative development at the time of project completion, would not require additional personnel or equipment, with the exception of fire protection services in the case of a major fire or disaster.

Biology: The project would have no effect on plant or animal life as the site is completely urbanized.

Hazards: The site and the project would neither cause nor be affected by hazardous uses or health hazards.

Cultural/Historic: No known cultural resources or structures designated to be of architectural or historic importance would be affected by project implementation. See page 28 for a mitigation measure which would be applied if any artifact, structural remnant, or other type of archaeological resource were found during project excavation.

ENVIRONMENTAL EVALUATION CHECKLIST

A. GENERAL CONSIDERATIONS

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>	<u>N/A</u>	<u>Disc.</u>
1. Would the project conflict with objectives and policies in the comprehensive Plan (Master Plan) of the City?	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>
2. Would the project require a variance or other special authorization under the City Planning Code? (Code modification)	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>
3. Would the project require an approval of permits from City departments other than DCP or BBI, or from Regional, State or Federal agencies?	<u> </u>	<u> </u>	<u>X</u>	<u> </u>	<u> </u>
4. Would the project conflict with adopted environmental plans and goals?	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>

The project would conflict with the density provisions of the City Planning Code. The City Planning Code is intended to implement precisely certain provisions of the Master Plan regarding building density. The basic 14:1 Floor Area Ratio (FAR) allowed by Section 124(a) of the City Planning Code would permit approximately 257,000 gross sq. ft. of space. The use of bonuses, described in Section 126 of the Code, would permit additional floor area. It is expected that bonuses described in Section 126 would permit 89,400 gross sq. ft. approximately, based on direct access to the mezzanine of the Market St. subway, provision of a second major building entrance, sidewalk widening, shortened walking distance between streets, and provision of an observation deck.

Under the limitations imposed by Ordinance 240-80, permitted bonus floor area could only be used for housing. In contrast to the 89,400 gross sq. ft. permitted as a bonus for housing, the proposed project plan includes 144,000 gross sq. ft. of housing. The project sponsor has proposed housing at precisely the ratio of 640 sq. ft. of housing for every 1000 sq. ft. of proposed office space. This is the ratio of housing recommended as the total housing requirement in the Department of City Planning's Guiding Downtown Development.

The total floor area permitted by the City Planning Code and Interim Controls, with the use of bonuses for housing, would be approximately 346,400 gross sq. ft., an FAR of 18.9:1. The project as proposed would contain about 401,000 gross sq. ft. and a total FAR of about 21.8:1; the additional floor area would be used for housing. Such a project could not be approved without amendments to Section 124(a) of the City Planning Code and Ordinance 240-80, which established the Interim Controls on the use of bonuses provided in Section 126 of the Code. Such amendments can be initiated only by the Board of Supervisors or the City Planning Commission and must be finally adopted by the Board of Supervisors. An interested property owner is not permitted to initiate such amendments, as stated in Section 302(b) of the City Planning Code. The C-3-0 use district is the one in which the highest density of development is permitted. Therefore, a change of the mapped District in which the project site is situated would not permit an increased density of development. The proposed guidelines for the site in Guiding Downtown Development would permit a maximum FAR of 17:1 including an FAR of 5:1 developed as housing.

For the building tower to exceed the maximum diagonal dimension of 200 ft. allowed by Section 270 of the City Planning Code, a Conditional Use authorization would be required. Conditional Use authorizations would also be required to allow the proposed parking facility to exceed 7% of the total gross floor area of the project and, under the Interim Controls, to permit the use of bonus floor area for residential use on the site.

B. ENVIRONMENTAL IMPACTS

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>	<u>N/A</u>	<u>Disc.</u>
1. <u>Land Use.</u> Would the proposed project:					
a. be different from surrounding land uses?	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>
b. disrupt or divide the physical arrangement of an established community?	<u> </u>	<u> </u>	<u>X</u>	<u> </u>	<u> </u>

The street-level retail uses and the 15 floors of office space would be similar to the uses surrounding the project and in the near vicinity. The ten floors of condominium apartments above the office floors would be the only residential use in the vicinity of the project site. Housing nearest the site is located four blocks to the north in the Golden Gateway, a multiple residential complex, four blocks to the west in two residential hotels on Kearny St., and four blocks to the south on Guy Place and Lansing St. There is no housing to the east. Housing on top of office buildings is proposed on the Dollar Block one block west of the site, in the One New Montgomery Place project three blocks to the west and in the Montgomery-Washington Building, about six blocks northwest of the project site.

2. <u>Visual quality and Urban Design.</u> Would the proposed project:	<u>Yes</u>	<u>Maybe</u>	<u>No</u>	<u>N/A</u>	<u>Disc.</u>
a. obstruct or degrade any scenic view or vista open to the public?	<u> </u>	<u> </u>	<u>X</u>	<u> </u>	<u> </u>
b. reduce or obstruct views from adjacent or nearby buildings?	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>
c. create a negative aesthetic effect?	<u> </u>	<u>X</u>	<u> </u>	<u> </u>	<u> </u>
d. generate light or glare affecting other properties?	<u> </u>	<u>X</u>	<u> </u>	<u> </u>	<u>X</u>

The project would not obstruct any scenic view or vista now available to the public as the site is surrounded by buildings as high or higher than the proposed structure. The project would block short views from the existing

buildings nearby and from the 101 California St. Building which is now under construction, as the proposed structure would be over three times as high as the existing buildings on the site. The project design is intended by the architect to visually compliment adjacent structures and to present a unifying element in the architecture of the vicinity. The proposed building would not be a prominent feature on the skyline. Drawings of the proposed building and photographs of the site will be presented in subsequent environmental documentation to enable the reader to evaluate the aesthetic impact of the project. The fenestration and types of glass intended for the building have not been determined to date; glare and light effects will be discussed in subsequent environmental documentation.

3. Population/Employment/Housing.

Would the proposed project:

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>	<u>N/A</u>	<u>Disc.</u>
a. alter the density of the area population?	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>
b. have a growth-inducing effect?	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>
c. require relocation of housing or businesses, with a displacement of people, in order to clear the site?	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>
d. create or eliminate jobs during construction and operation and maintenance of the project?	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>
e. create an additional demand for housing in San Francisco?	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>

The project would displace up to 600 employees and nine businesses. No housing would be displaced. To reduce existing pressures for housing in San Francisco, the project sponsor has proposed more housing than would be permitted under the bonus provisions of the City Planning Code (Section 126) and the Interim Controls (Ordinance 240-80). Housing is proposed at the ratio of 640 sq. ft. of housing for every 1000 sq. ft. of proposed office space; this is the ratio of housing recommended as the total housing requirement in the Department of City Planning's Guiding Downtown Development.

The project would include about 90 residential units. Project office employees would create a demand for about 200 housing units in San Francisco. The extent to which project housing would meet this demand would depend on the price of the units and employee salaries. The units would probably be too costly for most project employees.

Project construction would require about 600 person-years of labor over the two-year construction period. Upon completion, the project would employ about 1,000 persons, for a gain of 400 jobs.

The project would stimulate the Bay Area economy by creating temporary and permanent employment. These new job holders would purchase goods and services throughout the region, creating new employment and income opportunities. New permanent jobs would increase the demand for housing, especially moderate-income units, throughout the Bay Area.

Changing the Planning Code to allow a higher FAR for the proposed building could be growth inducing. Such changes may allow denser in-fill development in the project vicinity, and could set a precedent for Planning Code changes in other areas of the City.

4. Transportation/Circulation. Would the construction or operation of the project result in:

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>	<u>N/A</u>	<u>Disc.</u>
a. Change in use of existing transportation systems? (transit, roadways, pedestrian ways, etc.)	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>
b. An increase in traffic which is substantial in relation to existing loads and street capacity?	<u> </u>	<u>X</u>	<u> </u>	<u> </u>	<u> </u>
c. Effects on existing parking facilities, or demand for new parking?	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>
d. Alteration to current patterns of circulation or movement of people and/or goods?	<u> </u>	<u>X</u>	<u> </u>	<u> </u>	<u>X</u>
e. Increase in traffic hazards to motor vehicles, bicyclists or pedestrians?	<u> </u>	<u>X</u>	<u> </u>	<u> </u>	<u>X</u>
f. A need for maintenance or improvement or change in configuration of existing public roads or facilities?	<u> </u>	<u> </u>	<u>X</u>	<u> </u>	<u> </u>
g. Construction of new public roads?	<u> </u>	<u> </u>	<u>X</u>	<u> </u>	<u> </u>

An increase in local Municipal Railway (Muni) and regional transit patronage would occur and additional automobile trips would be attracted to the site and to the Downtown area. The project would generate a parking demand that would be met partially by on-site parking. At least one permanent parking space would be provided for each four residential units. Approximately 20 short-term parking spaces would be provided as accessory parking for office space users.

The project would require no change in the present pattern of circulation or in the configuration of existing public streets. Pedestrian use of sidewalks might increase and will require further analysis, as will the effects of the project on transit and traffic. Both project-related and cumulative transportation/circulation impacts will be given further consideration in subsequent environmental documentation.

5. Noise.

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>	<u>N/A</u>	<u>Disc.</u>
a. Would the proposed project result in generation of noise levels in excess of those currently existing in the area?	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>
b. Would existing noise levels impact the proposed use?	<u> </u>	<u> </u>	<u>X</u>	<u> </u>	<u> </u>
c. Are Title 25 Noise Insulation Standards applicable?	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>

Project operation would not result in noise levels in excess of those presently existing in the area. The amount of traffic generated by the project during any hour of the day, and cumulative traffic increases at the time of project completion, would cause traffic noise levels to increase by less than 1 dBA. A 1-dBA increase in environmental noise is undetectable by the untrained human ear. To produce a detectable increase in environmental noise, a doubling of existing traffic volumes would be required; traffic increases of this magnitude would not occur due to anticipated cumulative development.

A three-level parking area, to serve both the residential units and office space, and loading docks for commercial deliveries are proposed with access from Front St. Such facilities would generate additional traffic, but increased noise levels would be inaudible due to existing noise levels on Front, Pine and Market Sts.

Mechanical equipment noise is regulated by the San Francisco Noise Ordinance, San Francisco Municipal Code, Section 2909, "Fixed Source Noise Levels", which the project sponsor is committed to follow. The project site and surrounding area are zoned C-3-0. In this zone, the ordinance limits equipment noise levels to 70 dBA between 7 a.m. and 10 p.m. and 60 dBA between the hours of 10 p.m. and 7 a.m. at the property line. During lulls in traffic, mechanical equipment generating 70 dBA would dominate the site noise environment. As equipment noise levels would be limited to 60 dBA to meet the nighttime limit, they would not be audible within the sound-level context of the project. Further discussion of operational noise will not be included in subsequent environmental documentation for the project.

Typical of downtown San Francisco, the noise environment of the site is dominated by vehicular traffic noise. The Environmental Protection Element of the San Francisco Comprehensive Plan indicates a day-night average noise level (L_{dn}) of 70 dBA on Market, Pine, and Front Sts. adjacent to the site in 1974./1,2/ The Environmental Protection Element contains guidelines for determining the compatibility of various land uses with different noise environments. For residential and office uses the guidelines recommend no special noise control measures in an exterior noise environment up to an L_{dn} of 60 dBA for residential uses and 70 dBA for office uses. The exterior ground-level noise levels at the site are estimated to be 70 dBA. For this noise level, the guidelines require an analysis of noise reduction requirements and inclusion of noise insulation features in the building design. As this will be done by the project sponsor, no further analysis is needed in subsequent environmental documentation.

The California Administrative Code, Title 25, Noise Insulation Standards apply to all new residential structures, with the exception of single-family dwellings. The acceptable outdoor noise level for residential units is established as a community noise equivalent level (CNEL) of 60 dBA./3/ The exterior noise environment of the site exceeds a CNEL of 60 dBA at street level. At the upper floors of the building which are proposed for residential use, the CNEL would be less than at street level; the project would require, however, an acoustical analysis to show that the interior CNEL requirement of less than 45 dBA with the windows closed would be met. As the project sponsor has certified that the project would be constructed to conform with Title 25 Noise Insulation Standards, existing noise levels would have no significant effect and no further discussion is needed.

Project construction would require approximately two years and would involve demolition of two existing buildings, excavation, and construction of the proposed structure. These activities would temporarily result in noise levels in excess of those existing in the site vicinity when no other major building construction is taking place. The building foundation type has not yet been determined, but would probably involve foundation piledriving with an

impact-type (hammer) piledriver. Conventional unmuffled and unshielded piledrivers emit noise levels of 100 to 110 dBA at a distance of 100 ft. each time the driver strikes the pile. The quietest impact piledriver measured by the City generates noise levels of 92 dBA at 100 ft., but is not always compatible with construction requirements. Assuming noise emissions of 100 dBA at 100 ft., piledriving would be audible to people on the streets within 1,000 ft. of the project site, where not shielded by intervening buildings. In buildings surrounding the project site noise levels would reach as high as 75 to 80 dBA.

The San Francisco Noise Ordinance limits noise emissions from powered construction equipment, with the exception of impact tools, to 80 dBA at a distance of 100 ft. The project contractor would adhere to this limit to ensure that all equipment, other than impact tools, would cause noise levels at the nearest building to be no greater than present maximum noise levels due to traffic and other mechanical equipment. Piledriving equipment does not comply with the provisions of the Noise Ordinance; a limitation of the hours of construction where such equipment is used may be required under the ordinance. Further consideration will be given to this issue in subsequent environmental documentation for the project. Trucking of construction material to and from the site would not cause a noticeable increase in average noise levels along haul routes because of existing traffic noise levels on the streets.

NOTES - Noise

/1/ L_{dn} , the day-night average noise level, is a noise measurement based on human reaction to cumulative noise exposure over a 24-hour period, taking into account the greater annoyance of nighttime noises (noise between 10 p.m. and 7 a.m. is weighted 10 dBA higher than daytime noise).

/2/ dBA is the measurement of sound units of decibels (dB). The "A" denotes the A-weighted scale which simulates the response of the human ear to various frequencies of sound.

/3/ Community noise equivalent level (CNEL) is an averaged sound level measurement based on human reaction to cumulative noise exposure over a 24-hour period. The numerical values of CNEL and L_{dn} are essentially equal for most urban noise environments.

6. Air Quality/Climate. Would the proposed project result in:

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>	<u>N/A</u>	<u>Disc.</u>
a. Violation of any ambient quality standard or contribution to an existing air quality violation?	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>
b. Exposure of sensitive receptors to air pollutants?	<u> </u>	<u> </u>	<u>X</u>	<u> </u>	<u> </u>
c. Creation of objectionable odors?	<u> </u>	<u> </u>	<u>X</u>	<u> </u>	<u> </u>
d. Burning of any materials including brush, trees, or construction materials?	<u> </u>	<u> </u>	<u>X</u>	<u> </u>	<u> </u>
e. Alteration of wind, moisture, or temperature (including sun shading effects), or any change in climate, either locally or regionally?	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u>X</u>

Concentrations of air pollutants are monitored by the Bay Area Air Quality Management District (BAAQMD) at Van Ness Avenue and Ellis St., about 0.5 mile west of the project site. San Francisco currently is a nonattainment area for ozone, carbon monoxide (CO), and total suspended particulate (TSP). Although CO standards will probably not be met with present control programs, CO problems are localized, few in number, and believed to have case-specific solutions. Ozone concentration levels will continue to decline until about 1985. Present strategies to achieve the National Ambient Air Quality Standard (NAAQS) for ozone stress hydrocarbon control from motor vehicles. The other precursor of ozone, nitrogen oxide, is considered to be adequately controlled at the present time./1/ Like CO, TSP concentrations are highly localized problems.

Two types of air quality impacts could be expected from this project: short-term impacts from construction activity and equipment operation, and long-term impacts from habitation of the structure and project-generated traffic.

Construction activities would affect local air quality for about 12 months. Dust emissions from construction activities have been estimated to be 1.2 tons per acre per month, based upon an emission factor developed by the

Environmental Protection Agency (EPA)./2/ When this monthly factor is applied to the proposed project area (0.4 acres) and construction period, a monthly emission of 0.5 tons, and an overall construction emission of 6.0 tons of particulates result. The worst-case 24-hour average concentration associated with this emission is 6,400 micrograms per cubic meter (ug/m^3) at and adjacent to the site. Although this emission factor was developed from measurements associated with land clearing, excavation and building erection, other factors, such as soil moisture levels, vehicle traffic, and construction activities used in the study case, were not representative of expected conditions for the project. The EPA emission factor is probably 5 to 20 times higher than the actual site emission factor. Therefore, the anticipated particulate concentration would be 320 to 1280 ug/m^3 . The state standard is 100 ug/m^3 . Dustfall can be expected at times on surfaces within 200 to 400 feet of the site under low winds; under high winds, human discomfort may occur downwind from blowing dust. Mitigation measures, as described on p. 27, would reduce particulate emissions; however, violations of the NAAQS for TSP are likely near the site.

Paving materials, sealers, solvents, and paints used in the construction would generate hydrocarbon emissions. These emissions are controlled by the BAAQMD Regulation 8 rules./3/ These rules are part of an overall regional emissions limitation program for achieving the NAAQS for ozone.

Diesel-powered construction equipment would increase only slightly local and regional emissions of nitrogen oxides, carbon monoxide, sulfur oxides, hydrocarbons and particulates. High concentrations of some of these pollutants would occur near large sources on-site, and off-site when loading or unloading truck queues develop. Poor delivery scheduling could cause violations of the NAAQS for CO off-site.

The combined office and residential use of the building would have less impact on air quality than a single-use building because vehicle trips would be spread more evenly throughout the day; that is, peak-hour departures would be reduced. Additionally, a number of daily trips in and out of the downtown area would probably be eliminated owing to increased residential space there.

Nevertheless, project-generated traffic would incrementally degrade air quality, possibly causing CO levels to exceed the NAAQS. The potential for this can only be determined from detailed study of the project's effect on traffic. Traffic-produced emissions of other pollutants would be small and have little effect on air quality or standards.

Building emissions would arise from natural gas combustion for space and water heating and would be at roof level. Annual emissions from building operations would represent less than 5% of project related emissions. Electrical energy consumption would place an increased demand on local generation plants, possibly resulting in greater emissions from these facilities. No local impacts at the site would occur, although the regional burden of pollutants would increase slightly.

Receptors sensitive to carbon monoxide, ozone, and particulate exist in the San Francisco Bay Area. Chronic exposure to these air pollutants endangers human health, damages various types of materials, and injures broadleaf crops in agricultural areas. By contributing incrementally to the concentrations of these pollutants, and impeding attainment of regional air quality goals, the project would contribute to the chronic exposure of sensitive receptors to air pollutants.

Subsequent environmental documentation will be required to determine specific project-related and cumulative traffic air quality impacts. Other air quality effects are consistent with present programs, unavoidable, or insignificant and require no further studies.

The rounded shape of the upper 24 floors would reduce somewhat wind accelerations and the average ground velocities normally associated with high-rise structures. Because of the unusual shape of the proposed building and the complexity of urban wind patterns, wind studies will be necessary to determine the significance of these effects and will be included in subsequent environmental documentation.

The project would change shadowing patterns in the area. Shading on Pine, Front, and Market Sts. would be increased. Shadow studies will be necessary to determine the significance of these effects and will be included in subsequent environmental documentation.

NOTES - Air Quality

/1/ Bay Area Air Quality Management District (BAAQMD), 1979, Bay Area Air Quality Plan.

/2/ U.S. Environmental Protection Agency, 1977, Compilation of Air Pollutant Emission Factors. Office of Air Quality Planning and Standards, Research Triangle Park, NC.

/3/ BAAQMD, 1980, Rules and Regulations, Bay Area Quality Management District, San Francisco, CA

7. Utilities and Public Services. Would the proposed project:
- Have an effect upon, or result in a need for new or altered, governmental services in any of the following?

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>	<u>N/A</u>	<u>Disc.</u>
fire protection	_____	_____	<u>X</u>	_____	<u>X</u>
police protection	_____	_____	<u>X</u>	_____	<u>X</u>
schools	_____	_____	<u>X</u>	_____	<u>X</u>
parks or other recreational facilities	_____	_____	<u>X</u>	_____	<u>X</u>
maintenance of public facilities	_____	_____	<u>X</u>	_____	_____
power or natural gas	_____	_____	<u>X</u>	_____	<u>X</u>
communications systems	_____	_____	<u>X</u>	_____	<u>X</u>
water	_____	_____	<u>X</u>	_____	<u>X</u>
sewer/storm water drainage	_____	_____	<u>X</u>	_____	<u>X</u>
solid waste collection and disposal	_____	_____	<u>X</u>	_____	<u>X</u>

The project would incorporate more-extensive fire protection measures than most existing buildings have in order to comply with more-stringent Code standards now in effect. The project would increase the building area and the number of persons using the site. The introduction of residential uses would increase the fire hazard over that for office uses. Station No. 13, located

at 530 Sansome St. would be the primary response station for fire protection and emergency services. The project would not require additional personnel or equipment by the Fire Department, except in case of a major disaster. Present hydrant availability and fire flows are adequate./1/

The project would incorporate all emergency response systems stipulated by the Life Safety Code, including fire alarms, an emergency communication system, an emergency power supply and an on-site emergency water supply. These measures would reduce hazards to building occupants during an earthquake or fire.

The project would increase population and private property on the site, thus increasing the opportunity for crime. The project site is within the Southern Police District with headquarters at 850 Bryant St. The area is patrolled 24 hours a day by radio-dispatched patrol cars. There are no foot beats in the area immediately surrounding the site. The Police Department does not anticipate a need for additional personnel or equipment to serve the project at this time. If statistics indicate such a need at a later time more personnel would be assigned to patrol the area./2/ Appropriate mitigation measures (alarms, adequate lighting at entryways, security personnel, closed-circuit camera systems, and separate secured entrances for residential areas) would reduce the effects of the project on the Police Department.

San Francisco schools are currently losing student population and would be able to serve any additional students generated by the project./3/

The project would generate a demand for urbanized recreational facilities, such as plazas and city parks with benches, and exercise clubs and indoor sports. The 101 California St. Plaza will be located one block north of the site and the Mutual Benefit Life Plaza is one block to the east. A recreational facility, such as a health club, would be provided for project residents on the mechanical floor between the office and residential units. There would be a rooftop garden of about 7,800 sq. ft., which would serve as common open space for the building occupants. The project would have no direct effect on the maintenance of public facilities.

The project would result in a net increase in consumption of energy on the site. The project would conform to California Energy Commission standards for residential and nonresidential buildings. The project would require multiple substreet transformer vaults. There are existing electrical and high and low pressure natural gas facilities in the streets surrounding the site. Street trenching would be required. The street chosen for utility connection depends on the final design load. No gas or electricity supply problems are anticipated./4/

The project would result in increased use of communication systems. There are communications facilities in all streets surrounding the site. Connections would probably occur from Pine St. No supply or capacity problems exist and no significant effects would result./5/

The project would result in a net increase in water use at the site of about 46,000 gallons per day (gpd). The project site is served by two water mains: an 8-inch diameter main on the east side of Front St. and a 6-inch diameter main on the north side of Pine St. Existing mains have sufficient capacity to handle the additional demand and no supply problems are anticipated. /6/

The project would generate an estimated wastewater flow increase of 46,000 gpd. The site is presently served by three combined sanitary and storm sewers; a 12-inch diameter sewer on Front St., a 24-inch diameter sewer on Pine St. and a 24-inch diameter sewer on Market St. Sewer connections would likely be on either Pine St. or Front St. Existing sewers would have sufficient capacity to handle the additional flows./7/ Project-generated wastewater flows represent about 0.01% of the average daily flows of 65 million gallons per day (MGD) currently being treated at the North Point Water Pollution Control Plant, and about 0.008% of the projected 85 to 90 mgd treatment capacity of the Southeast Water Pollution Control Plant which will go into interim operation in 1982. Flows to the North Point plant, which currently serves the site, would be directed to the Southeast plant at that time. North Point would then become a storm-flow treatment facility. No expansion of the present wastewater collection and treatment system would be required to serve the project./8/

When in operation the project would generate a net increase in solid waste of about 3.25 tons per day. Golden Gate Disposal Company, which currently serves the site, anticipates no problem in meeting collection demand./9/ Disposal of municipal solid wastes presently occurs at a landfill site in Mountain View. The contract with this facility expires in October 1983. The City is presently negotiating with other landfill sites to accept San Francisco's solid waste on an interim basis until a solid waste program is implemented in late 1986. The solid waste program would consist of intensified recycling, a resource recovery project generating electricity from the burning of solid wastes, and landfill disposal of bypass and residue wastes from the resource recovery process. The project and cumulative development are not expected to present problems in solid waste disposal upon implementation of the solid waste program./10/

NOTES - Utilities and Public Services

/1/ Chief Joseph Sullivan, Chief Support Services, San Francisco Fire Department, written communication, June 23, 1981.

/2/ Paul Libert, Sergeant, Division of Planning & Research, San Francisco Police Department, telephone communication, June 24, 1981.

/3/ Robert Haslam, Property Management Department, San Francisco Unified School District, oral communication, September 15, 1981

/4/ This paragraph is based on telephone communications with Alfred Williams, Industrial Power Engineer, PG&E, John Oliver, Associate District Engineer, PG&E, and Bruno Wilson, Senior Map Draftsman, PG&E, June 30, 1981.

/5/ Robert Richards, Facilities Engineer, Pacific Telephone and Telegraph Company, telephone communication, July 2, 1981.

/6/ This paragraph is based on telephone communications with Cy Wentworth, Water Serviceman, Engineering Department, San Francisco Water Department, June 24, 1981, and Jack Kenck, Manager, Distribution Division, San Francisco Water Department, October 28, 1981.

/7/ Nathan Lee, Engineering Associate II, Division of Sewer System Design, San Francisco Clean Water Program, telephone communication, June 24, 1981.

/8/ Don Hayashi, Director, Citizens Participation, San Francisco Clean Water Program, telephone communication, June 24, 1981.

/9/ Fiore Garbarino, Treasurer, Golden Gate Disposal Company, telephone communication, June 24, 1981.

/10/ David Cohen, Office of Special Projects, City of San Francisco, oral communication, September 20, 1981

8. Biology.

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>	<u>N/A</u>	<u>Disc.</u>
a. Would there be a reduction in plant and/or animal habitat or interference with the movement of migratory fish or wildlife species?	_____	_____	<u>X</u>	_____	_____
b. Would the project affect the existence or habitat of any rare, endangered or unique species located on or near the site?	_____	_____	<u>X</u>	_____	_____
c. Would the project require removal of mature scenic trees?	_____	_____	<u>X</u>	_____	_____

9. Land. (topography, soils, geology)
Would proposed project result in or be subject to:

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>	<u>N/A</u>	<u>Disc.</u>
a. Potentially hazardous geologic or soils conditions on or immediately adjoining the site? (slides, subsidence, erosion, and liquefaction)	_____	<u>X</u>	_____	_____	<u>X</u>
b. Grading? (consider height, steepness and visibility of proposed slopes; consider effect of grading on trees and ridge tops)	_____	<u>X</u>	_____	_____	<u>X</u>
c. Generation of substantial spoils during site preparation, grading, dredging or fill?	_____	<u>X</u>	_____	_____	<u>X</u>

No site specific soils analysis has been made. Data pertaining to the adjacent 101 California St. Building indicate that the site is directly underlain by artificial fill and soft Bay mud deposits which are compressible and unsuitable as a foundation base. All large buildings in the project locality are supported by piles driven into deeper geologic materials capable of bearing heavy loads. Analysis of the site soils would be undertaken by a geotechnical consultant. Recommendations from a geotechnical study would be followed in the final design of the project.

The only grading on the site would be related to foundation preparation and the results would not be visible upon completion of the project. Demolition of the existing structures and excavation would result in the removal of

brick, concrete, and fill material from the site. Any material removed would be disposed of in an officially approved disposal site. A discussion of grading and foundation design will be included in the subsequent environmental documentation for the project.

10. Water. Would the proposed project result in:

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>	<u>N/A</u>	<u>Disc.</u>
a. Reduction in the quality of surface water?	_____	_____	<u>X</u>	_____	_____
b. Change in runoff or alteration to drainage patterns?	_____	_____	<u>X</u>	_____	_____
c. Change in water use?	<u>X</u>	_____	_____	_____	<u>X</u>
d. Change in quality of public water supply or in quality or quantity (dewatering) of ground water?	_____	<u>X</u>	_____	_____	_____

On-site water consumption would increase by about 46,000 gallons per day (gpd). Project-related excavation would extend below groundwater level and dewatering would be required during construction. The extent and effects of dewatering will be discussed in the subsequent environmental documentation for the project.

11. Energy/Natural Resources. Would the proposed project result in:

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>	<u>N/A</u>	<u>Disc.</u>
a. Any change in consumption of energy?	<u>X</u>	_____	_____	_____	<u>X</u>
b. Substantial increase in demand on existing energy sources?	_____	<u>X</u>	_____	_____	<u>X</u>
c. An effect on the potential use, extraction, conservation or depletion of a natural resource?	_____	<u>X</u>	_____	_____	<u>X</u>

The project would result in a net increase in energy consumption on the site because of the greater building area to be served. The project would conform to energy requirements of Title 24 of the California Administrative Code so that energy use per square foot of floor area would be less than at present. As specific building designs have not been developed, the amount of total

energy consumption and unnecessary, wasteful or inefficient uses of energy cannot be identified.

There would be an increase in peak-hour electrical demand resulting from elevator use in addition to the peak-hour demand characteristics of other uses in the structure. Other aspects of electrical and natural gas demand characteristics cannot be identified until a more precise building design is developed. Energy consumption will be discussed further in subsequent environmental documentation for the project.

The potential for shadows from the structure to reduce the feasibility of future active solar energy collection installations in some locations off-site will be studied in subsequent environmental documentation. No existing (or proposed) active solar energy collection installations would be affected as none are located (or anticipated) in the immediate area north of the site. No other natural energy resources would be directly affected.

12. Hazards. Would the proposed project result in:

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>	<u>N/A</u>	<u>Disc.</u>
a. Increased risk of explosion or release of hazardous substances (e.g., oil, pesticides, chemicals or radiation), in the event of an accident, or cause other dangers to public health and safety?	_____	_____	<u>X</u>	_____	_____
b. Creation of or exposure to a potential health hazard.	_____	_____	<u>X</u>	_____	_____
c. Possible interference with an emergency response plan or emergency evacuation plan?	_____	<u>X</u>	_____	_____	<u>X</u>

The project would increase the City's daytime population; residents and employees of the proposed building would contribute to congestion if an emergency evacuation of Downtown were require. The potential impact of the project on the City's emergency response plan will be considered in subsequent environmental documentation.

13. Cultural. Would the proposed project:

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>	<u>N/A</u>	<u>Disc.</u>
a. Include or affect a historic site, structure, or building?	<u> </u>	<u> </u>	<u>X</u>	<u> </u>	<u>X</u>
b. Include or affect a known archaeological resource or an area of archaeological resource potential?	<u> </u>	<u> </u>	<u>X</u>	<u> </u>	<u>X</u>
c. Cause a physical change affecting unique ethnic or cultural values?	<u> </u>	<u> </u>	<u>X</u>	<u> </u>	<u> </u>

The site contains no buildings rated to be of major architectural importance in the 1979 survey conducted by the Foundation for San Francisco's Architectural Heritage and published in Splendid Survivors. No structures included in the City's official list of Architecturally and/or Historically Significant Buildings, adopted by the City Planning Commission on May 29, 1980, exist on the site.

The project site was once part of Yerba Buena Cove. A map prepared by and on file at the San Francisco Maritime Museum shows a ship, the Callao, in the intersection of Pine and Davis Sts., but none on the site. Scattered artifacts of historic interest may be found. See Section C below for a mitigation measure to be applied in the event of such a finding.

C. MITIGATION MEASURES:	<u>Yes</u>	<u>No</u>	<u>Disc.</u>
Are mitigation measures included in the project?	<u>X</u>	<u> </u>	<u>X</u>
Are other mitigation measures available?	<u>X</u>	<u> </u>	<u> </u>

A number of mitigation measures have been included in the project as designed to date. They are described below.

INCLUDED IN THE PROJECT

1. The project proposes to provide approximately 90 residential condominium units on-site. The size of these units would vary to provide for a diverse market sector. Project housing would help mitigate increased demand on the city's housing supply which may be generated by the project's office development.

2. Pedestrian amenities including street trees, two levels of retail use and landscaped open space would be located at each corner of the building and at the building entrances. To reduce pedestrian congestion on sidewalks surrounding the site, the project includes multiple building entrances, widened sidewalks and a direct connection to the Market St. subway.

3. To reduce the parking demand generated by the project, long term parking in excess of the required ratio of one space for every four dwelling units would be provided for building residents. Approximately 20 spaces would be used for short-term parking for visitors to the office building.

4. To mitigate traffic congestion by the project, the sponsor would encourage transit use through the sale on-site of BART and Muni passes to employees, and by encouraging employee carpool and vanpool systems in cooperation with RIDES for Bay Area commuters.

5. Two off-street loading docks would be provided, thereby reducing on-street commercial deliveries and their associated congestion on streets surrounding the site.

6. During the construction period, construction truck movement would be limited to the hours between 9 A.M. and 4 P.M. to minimize peak-hour traffic conflicts.

7. The project sponsor would contribute as appropriate to an established Downtown transit assessment district, which would mitigate potential peak-hour transit congestion associated with project development.

8. The project contractor would muffle and shield intakes and exhaust, shroud or shield impact tools, and use electric-powered rather than diesel-powered construction equipment, as feasible.

9. The project contractor would limit piledriving to the hours resulting in the least disturbance to neighboring uses, such as 4:00 p.m. to 10:00 p.m. This would require a night-work permit from the Department of Public Works. The project sponsor and project contractor would meet with the Bureau of Engineering to determine additional necessary and feasible measures to reduce noise during the period that piledriving would occur.

10. During excavation, unpaved demolition and construction areas would be wetted at least twice a day to hold down dust; this would reduce particulate emissions (dust) by about 50%. A solid fence would be provided around the construction site to further reduce dust.

11. The project contractor would maintain and operate construction equipment in such a way as to minimize exhaust emissions. During construction, trucks in loading or unloading queues would be kept with their engines off when not in use to reduce carbon monoxide emissions. The project sponsor would meet with the Department of Public Works to discuss and agree upon a scheduling program to minimize the queuing of construction vehicles.

12. The project contractor would use water-based or latex paints on all interior drywalls painted, rather than oil-based paints which emit hydrocarbons while drying. This would reduce hydrocarbons from drying paint by about 60%

13. When in operation, the project would provide internal security measures to reduce the demand on police services. These measures would include a closed-circuit TV system, security guards, well-lighted entries, alarm systems, and separate entrances for residential areas of the building with call-telephones and computerized lock systems.

14. The project would incorporate low-flow faucet, shower and toilet fixtures to reduce water consumption and wastewater generation.

15. The building would be equipped with a trash compactor to reduce the volume of solid waste requiring storage and transport. Separate storage facilities for recyclable waste material would be provided for both office and residential uses.

16. A detailed foundation and structural design study would be conducted for the building by a licensed structural engineer and a geotechnical consultant. The project sponsor would follow the recommendations of these studies during the final design and construction of the project.

17. Whenever possible, office suites would be equipped with individualized light switches, time clock operation, and fluorescent lights to conserve electric energy. Residential units would have individually metered gas, water and electric services to provide incentive to reduce energy consumption.

18. The heating, ventilating and air conditioning (HVAC) system would be equipped with an economizer cycle to use outside air for cooling, as feasible. Apartments would have windows that would open for natural ventilation.

19. Should evidence of cultural or historic artifacts of significance be found during project excavation, the Environmental Review Officer and the President of the Landmarks Preservation Advisory Board would be notified. The project sponsor would select an archaeologist to help the Office of Environmental Review determine the significance of the find and whether feasible measures, including appropriate security measures, could be implemented to preserve or recover such artifacts. The Environmental Review Officer would then recommend specific mitigation measures, if necessary, and recommendations would be sent to the State Office of Historic Preservation. Excavation or construction which might damage the discovered cultural resources would be suspended for a maximum of four weeks to permit inspection, recommendation and retrieval, if appropriate.

D. ALTERNATIVES:

Were other alternatives considered:

<u>Yes</u>	<u>No</u>	<u>Disc.</u>
<u>X</u>	<u> </u>	<u>X</u>

A major alternative considered is development of the site with the same amount of office space as proposed under the project, but with a reduced amount of housing. Maximum bonuses permitted under existing Interim Controls would be

applied for residential use. This alternative would result in a Basic FAR of 18.9:1. Modification of the City Planning Code would not be required.

Another alternative considered is a building consistent with the policy described in Guiding Downtown Development, published by the Department of City Planning in May 1981. Under this alternative an FAR of 12:1 would be permitted for office space with an additional FAR of 5:1 provided for residential use. Other alternatives which will be considered in subsequent environmental documentation include: an office building with a Basic FAR of 14:1 that would not use any of the bonuses permitted under the Interim Controls and would not provide residential use; an office building with a Basic FAR of 14:1 that would apply maximum bonuses allowed under the City Planning Code, without the Interim Controls, for additional office space and would not provide residential use; and the no-project alternative.

E. MANDATORY FINDINGS OF SIGNIFICANCE:

- | | Yes | No | Disc. |
|---|--------------|--------------|-------|
| 1. Does the project have the potential to degrade the quality of the environment substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal, or eliminate important examples of the major periods of California history or prehistory? | _____ | <u> X </u> | _____ |
| 2. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? | _____ | <u> X </u> | _____ |
| 3. Does the project have possible environmental effects which are individually limited, but cumulatively considerably? | <u> X </u> | _____ | _____ |

Yes No Disc.

4. Would the project cause substantial adverse effects on human beings, either directly or indirectly?

_____ X _____

5. Is there a serious public controversy concerning the possible environmental effects of the project.

_____ X _____

APPENDIX B: WIND-TUNNEL STUDY

388 MARKET STREET BUILDING

1. MODEL AND WIND-TUNNEL FACILITIES

Model

A 1/50 scaled model of the downtown San Francisco area surrounding the proposed building site for several blocks in all directions was provided by ESA, Inc. The model was capable of having three configurations (existing setting, proposed project and Alternative One) each available for separate wind-tunnel testing.

Wind-Tunnel Facilities

An environmental wind tunnel was built for testing natural atmospheric boundary layer flows past surface objects such as buildings and other structures. The tunnel has an overall length of 22 meters (m) (72 ft.), a test section of 1.22 m (4 ft.) wide by 1.83 m (6 ft.) high and has an adjustable false ceiling. Wind speeds within the tunnel can be varied from 1 to 4 meters per second (m/s) or 4.8 to 19.3 miles per hour (mph).

The atmospheric boundary layer flow over the downtown area was simulated by an upwind network of turbulence generators. The wind tunnel's false ceiling was adjusted to provide a zero-pressure-gradient downstream flow. The adjustment

of the flow to zero-pressure-gradient flow is known to properly model atmospheric boundary layers near the surface of the earth. The long flow development length allows a naturally turbulent boundary layer to develop and properly models the full-scale flow.

2. TESTING PROCEDURE

The wind study was divided into two parts: flow visualization and wind-speed measurements. The flow visualization observations were performed by injecting a continuous stream of smoke at various near-surface locations. The subsequent motion of the smoke was recorded and prevailing wind directions determined. Wind-speed measurements were made at 20 surface locations using a hot-wire anemometer, an instrument that directly relates rates of heat transfer by electronic signals. The hot-wire signals are proportional to the magnitude and steadiness of the wind. Both the mean wind speeds and corresponding turbulence intensities were measured. Thus, high wind speeds and gustiness (large variable changes in wind speeds over short changes in time) could be detected. Hot-wire measurements made close to the surface have an inherent uncertainty of \pm five percent of the true values.

Calibration measurements were made before and after each series of hot-wire experiments. The calibration was accomplished by means of a Thermo-System Incorporated (TSI) Model #1126 hot-wire anemometer calibrator especially designed for low-wind speeds. The calibration is accurate to \pm one percent. The flow above the model was adjusted to nearly the same wind speed of 3.43 m/second (11.3 ft/sec or 7.67 mph) for all experiments. The ratio of near surface speed to freestream wind speed was calculated from the hot-wire measurements and is presented on the attached figures.

Experiments were performed for three prevailing wind directions (west, northwest and southwest) for the existing setting, proposed project and Alternative One. These wind conditions are the most common in San Francisco, and are therefore the most representative for evaluation purposes. All hot-wire measurements were taken at the same series of surface points around the building for all three wind directions and the structural configurations.

3. TEST RESULTS AND DISCUSSION

The measured wind speeds are expressed as normalized percentage of the freestream wind-tunnel speed where 1.0 represents a wind speed equal to 100 percent of the freestream value. The numerical ratios displayed on the figures can be approximately interpreted by using the following scale presented in Table B1. The assessment of wind impact on the surrounding settings is preliminary and should be construed only as an estimate of the projected actual wind environment. The scale presented in Table B1 is subjective.

 TABLE B1: RELATIVE INTENSITY OF SURFACE WINDS

<u>Intensity of Wind Speed</u>	<u>Percentage of Freestream Speed</u>
Low	0.00 - 0.19
Moderately low	0.20 - 0.29
Moderate	0.30 - 0.49
Moderately high	0.50 - 0.69
High	0.70 - 1.00
Very high	over 1.00

It should be noted that the plotted values are not actual wind speeds but ratios. Thus, a point having "very high" wind speed could still experience light winds on a near-calm day. Likewise, a point found to have "low" wind speed could experience relatively high winds on a windy day.

West Wind

(i) Setting. The existing near surface wind speeds are low or moderately low at all measured locations. The following features characterize wind environment: (a) The wind accelerates from low to moderately low values along Market St. from Mechanic's Plaza with speed wind ratios of 0.10 - 0.12 to 0.26 along the sidewalk at the Shaklee Terraces (444 Market St.); (b) Wind along Market St. south of 388 Market St. experiences a rapid deceleration-acceleration from 0.17 occurring at the Front St. corner to 0.09 occurring midway and south of 388 Market to 0.22 occurring at the Pine-Market Sts. intersection; (c) A vertical vortex forming off of the building at 111 Pine St. turns some of the wind south on Front St.; and (d) Vertical vortices are formed off the west and east corners of 101 California St.

(ii) Impact of Project. The presence of the proposed building would result in two minor changes: (a) The wind along Market St. south of the proposed building would not experience the rapid deceleration-acceleration observed in the existing wind environment, but the wind speeds would remain more constant; and (b) No vertical vortex would form off the southeast corner of the 101 California St. building. All wind speed ratios would be low or moderately low in magnitude.

(iii) Alternative One. The presence of the alternate building would result in generally the same wind environment as that created by the proposed building except the wind along Market St. south of the site would be nearly constant.

Northwest Wind

(i) Setting. The existing near surface wind speeds are low or moderately low at all measured locations. Wind along Market St. adjacent to the Shaklee Terraces experiences a local acceleration from a wind ratio of 0.14 on Mechanic's Plaza to 0.24 along the Shaklee Terraces to 0.14 at the Front-Market Sts. intersection.

(ii) Impact of Project. The presence of the proposed building would result in the following changes: (a) Nearly a doubling of the wind speed, from 0.13 to 0.24, at the northeast corner of the proposed building on the Pine-Market Sts. intersection; (b) A more than doubling of the wind speed, from 0.13 to 0.33, at the Beale-Market Sts. intersection; (c) An approximate 50 percent increase at the Fremont-Market Sts. intersection and along Fremont St. All of these changes would be caused by channeling of the winds around the proposed building and onto Beale and Fremont Sts. These streets nearly align with the northwest wind direction.

(iii) Alternative One. The presence of the alternate building would result in generally the same wind environment as that created by the presence of the proposed building except for an approximate 10-20 percent increase of wind speeds along Beale and Fremont Sts. and at the Pine and Market Sts. intersection.

Southwest Wind

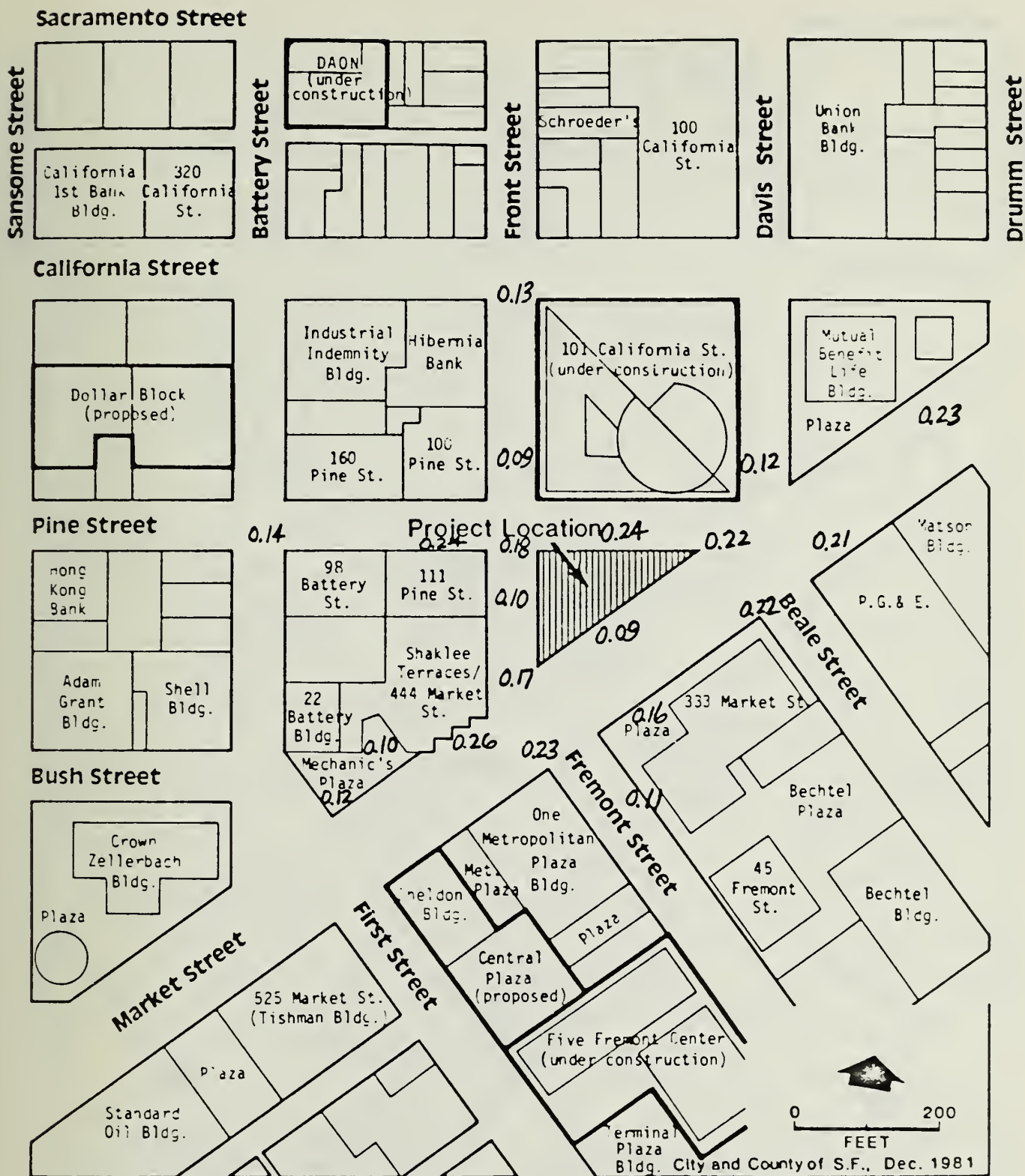
(i) Setting. The existing near surface wind speeds are low or moderately low at all measured locations. Winds across Market St. at Davis-Beale Sts. and near Front-Fremont Sts. at the Shaklee Terraces experience rapid changes in magnitudes from 0.10 to 0.26 and 0.23 to 0.09, respectively. The magnitude of the winds immediately around the existing building are all low.

(ii) Impact of Project. The presence of the proposed building would result in the following changes: (a) Wind speed along Front St. both north and south of Pine St. would be effectively doubled to 0.21; (b) Wind on the plaza at the Market-Fremont Sts. intersection would decrease 42 percent from 0.24 to 0.14; and (c) Wind along Market St. would increase 65 percent southwest of Drumm St., from 0.17 to 0.28.

(iii) Alternative One. The presence of the alternate building would result in generally the same wind environment as that created by the presence of the proposed building, except that the wind speed ratio along Market St. southwest of Drumm St. would increase to 0.31.

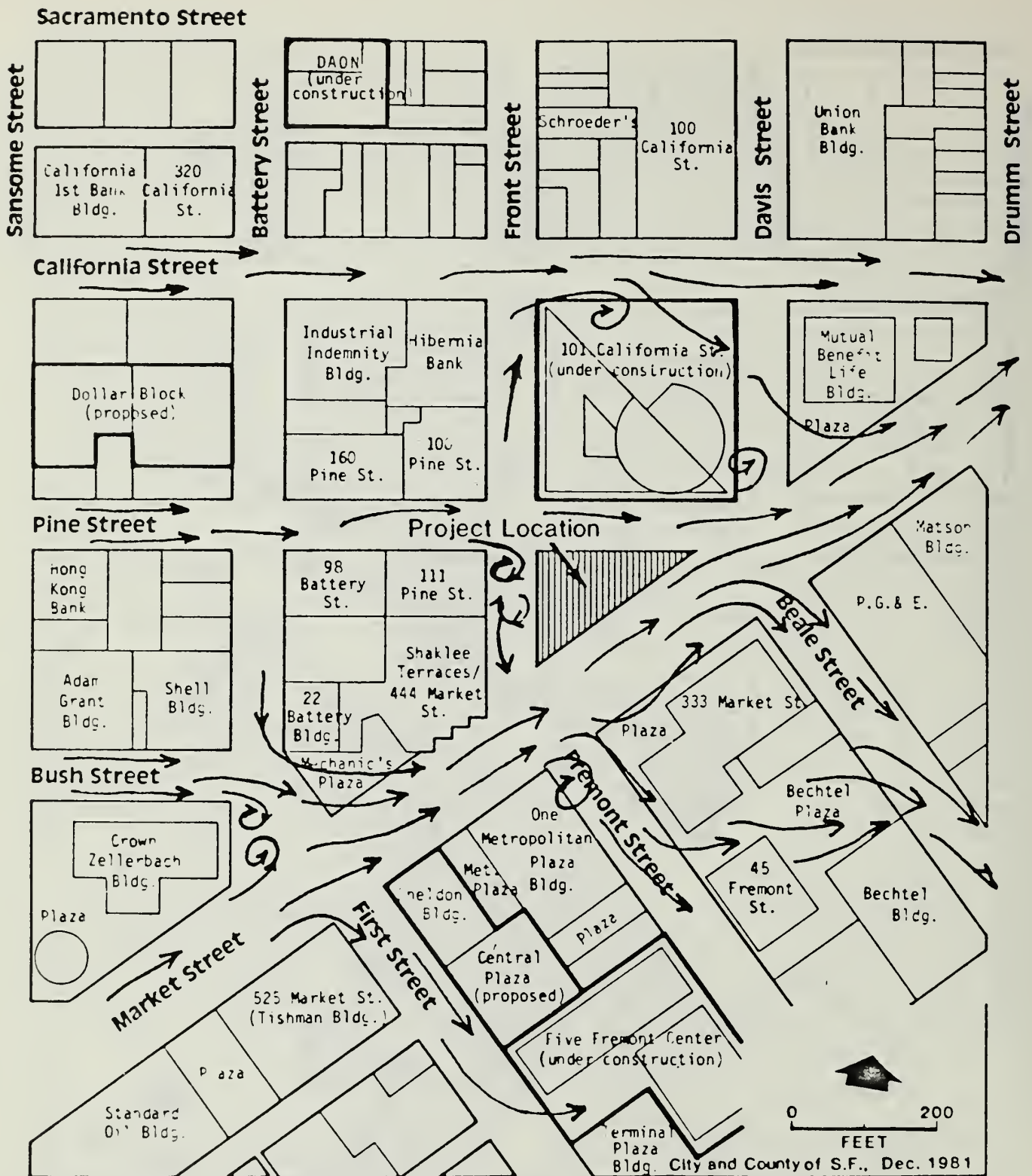
4. MITIGATION MEASURES

The three most undesirable changes in the wind environment due to the presence of the proposed building all occur for the northwest wind. The three changes are: (a) An approximate doubling of the wind speed, from 0.13 to 0.24, at the northeast corner of the proposed building on the Pine-Market Sts. intersection; (b) A more than doubling of the wind speed from 0.13 to 0.33, at the Beale-Market Sts. intersection; and (c) An approximate 50 percent increase at the Fremont-Market Sts. intersection and along Fremont St. While these three changes are probably not minor they are not major or severe in extent. Mitigating measures that should substantially reduce or eliminate the moderate wind speeds at the Beale-Market Sts. intersection would be the construction of small structures that could function as windbreaks along the sidewalks. They could include, but are not limited to, mature street trees, kiosks for newspapers, flower vendors, telephone booths or low (10 - 15 ft. high) street side planters beside the proposed building on Front St. The moderately low wind flow through the other two intersections would also be reduced by the construction of small structures that could serve as wind breaks similar or the same as those aforementioned.



**FIGURE B1: Wind Speed Ratios
for West Wind
- Existing Conditions**

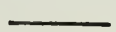
SOURCE: Environmental Science Associates, Inc.



Legend



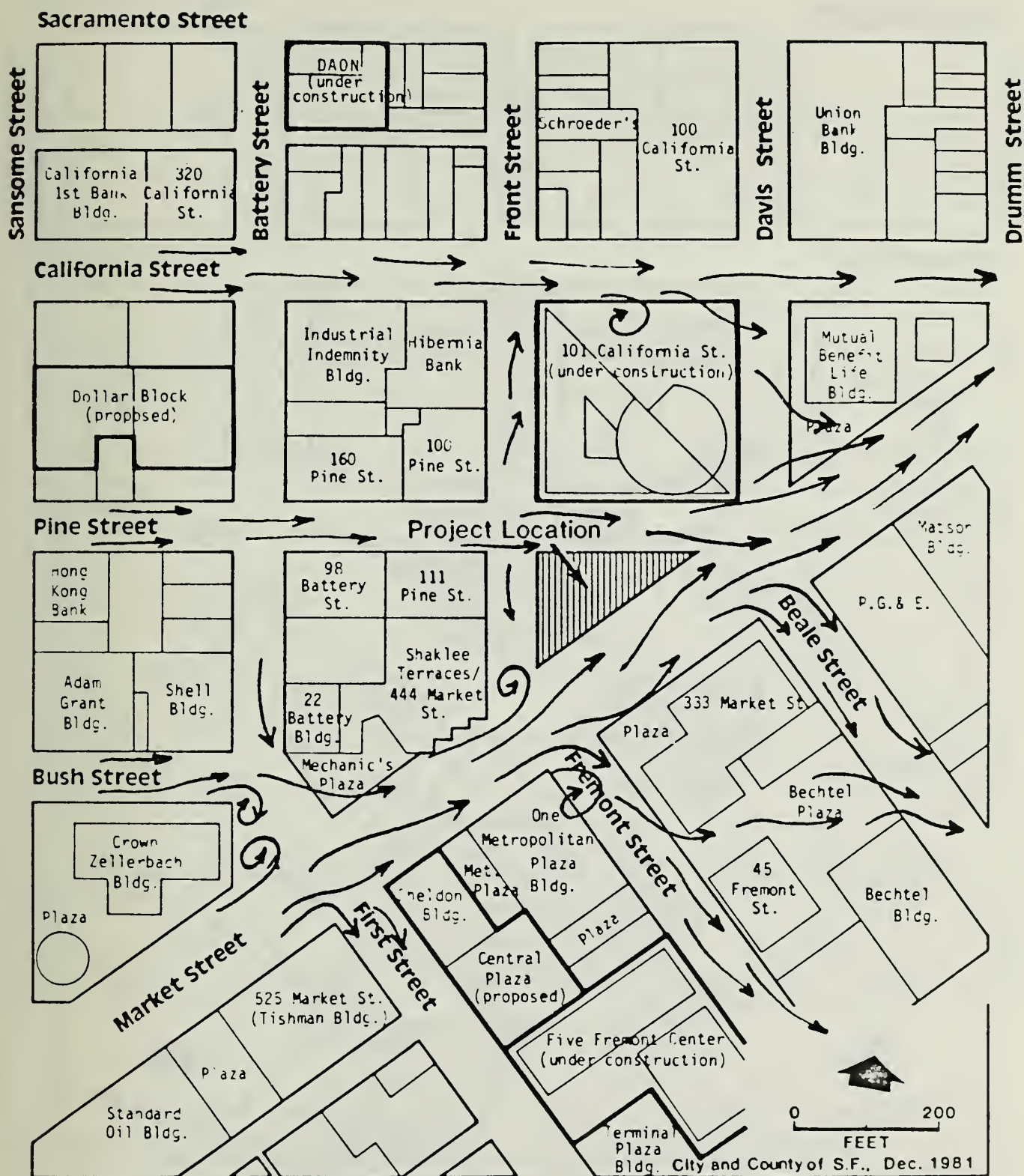
Project Location



Sites Under Development

**FIGURE B4: Wind Flows for West Wind
- Existing Conditions**

SOURCE: Environmental Science Associates, Inc.



Legend



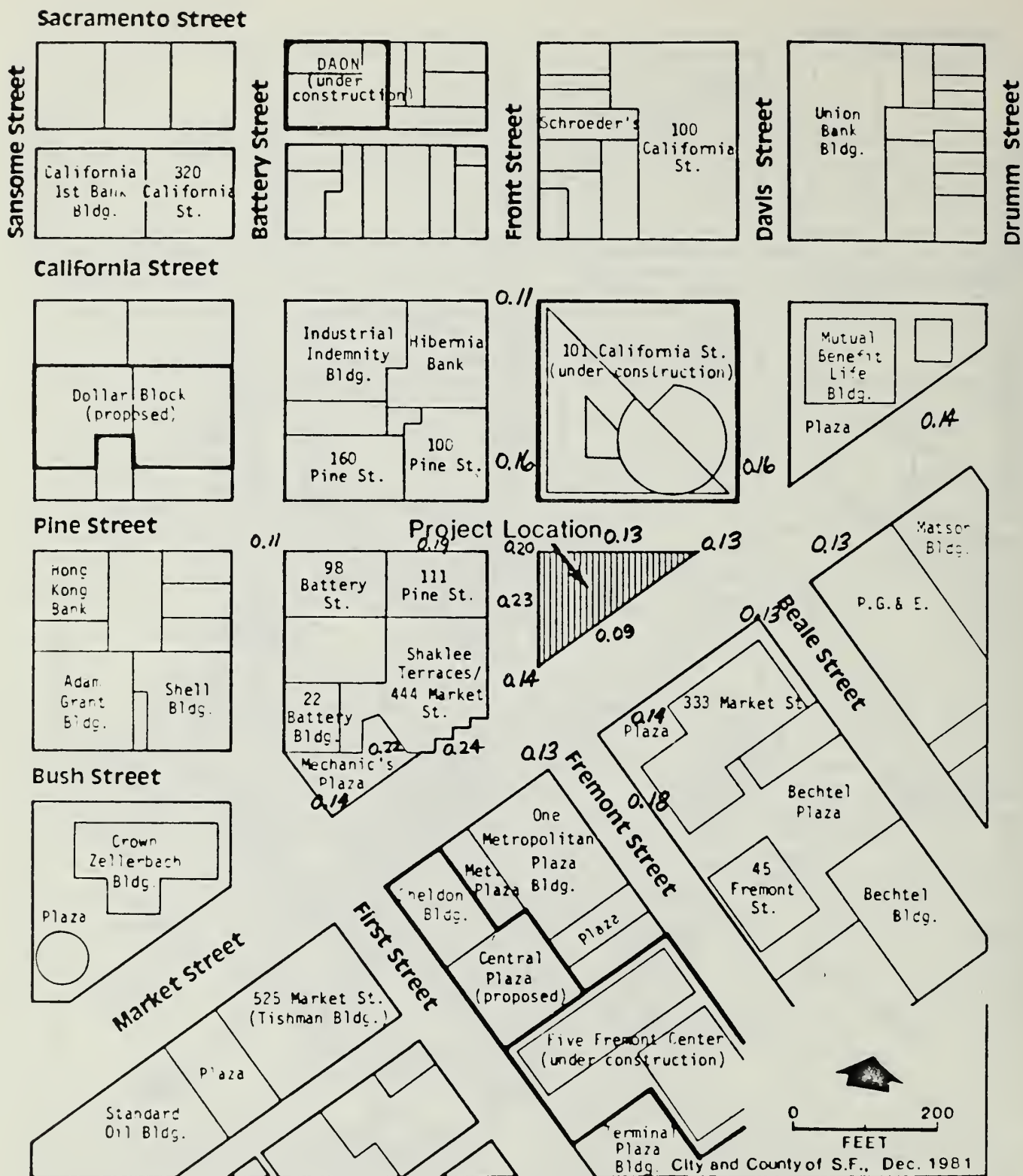
Project Location



Sites Under Development

FIGURE B5: Wind Flows for West Wind
 - Project and Alternative One

SOURCE: Environmental Science Associates, Inc.



Legend



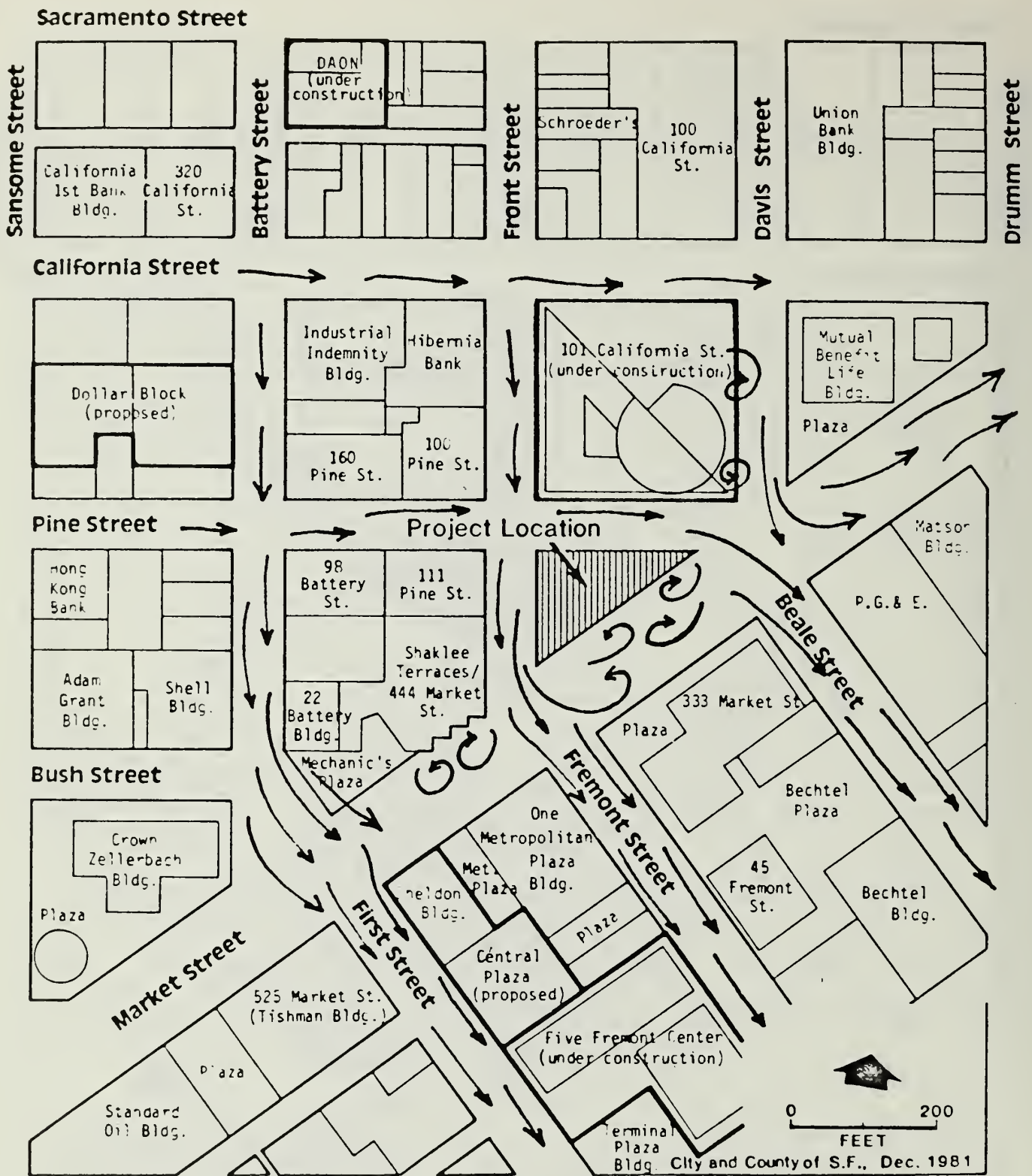
Project Location



Sites Under Development

**FIGURE B6: Wind Speed Ratios
for Northwest Wind
- Existing Conditions**

SOURCE: Environmental Science Associates, Inc.



Legend



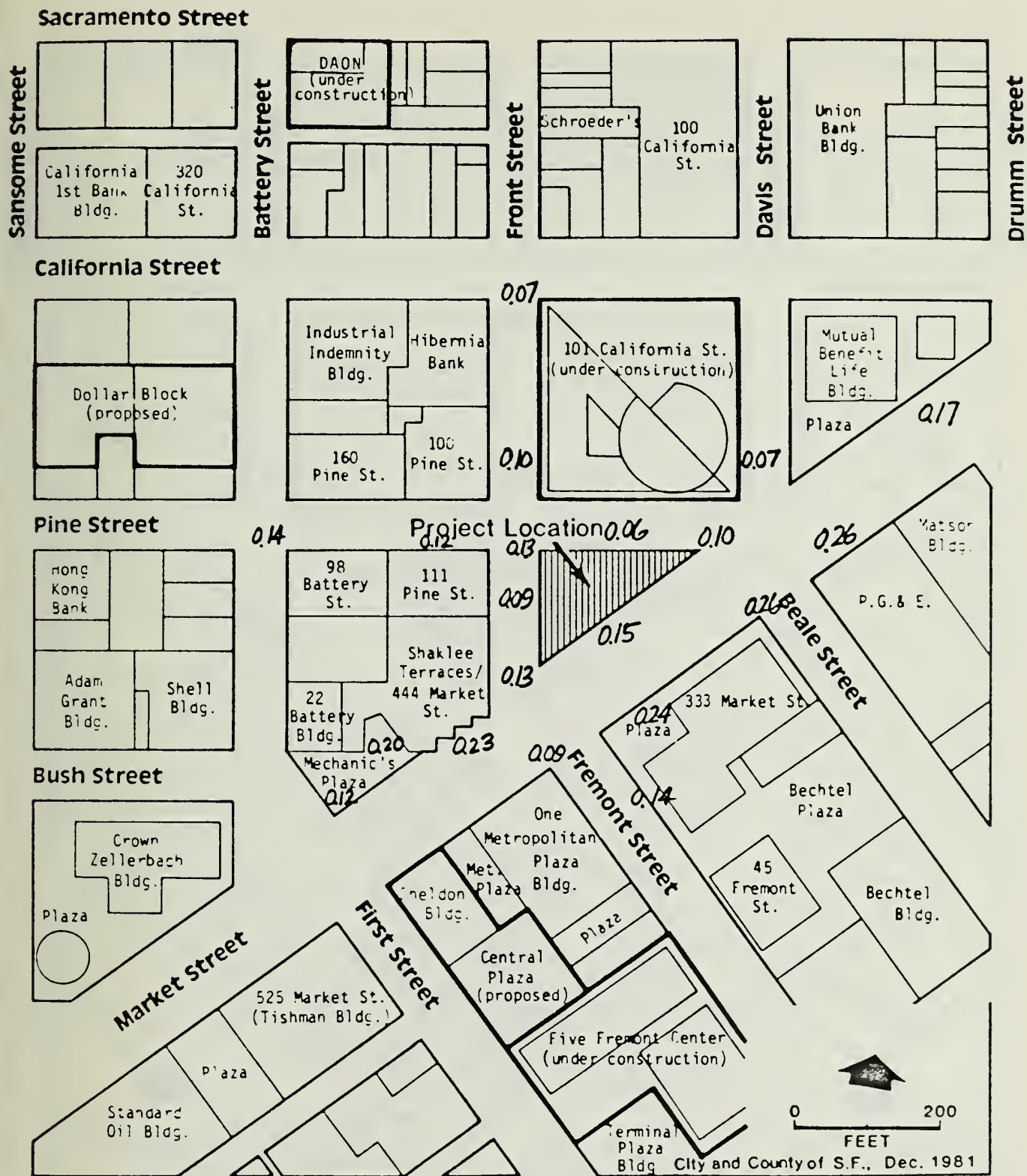
Project Location



Sites Under Development

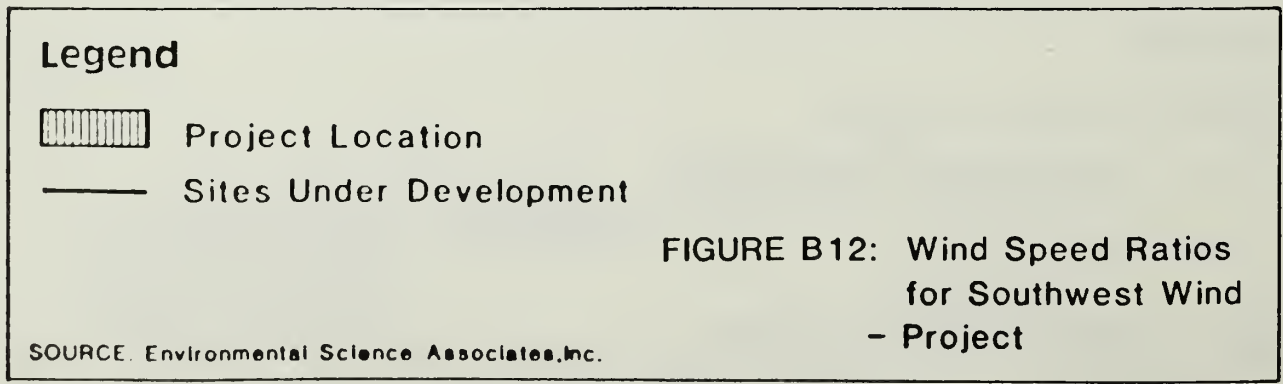
**FIGURE B10: Wind Flows
for Northwest Wind
-Project and
Alternative One**

SOURCE Environmental Science Associates, Inc



**FIGURE B11: Wind Speed Ratios
for Southwest Wind
- Existing Conditions**

SOURCE: Environmental Science Associates, Inc.



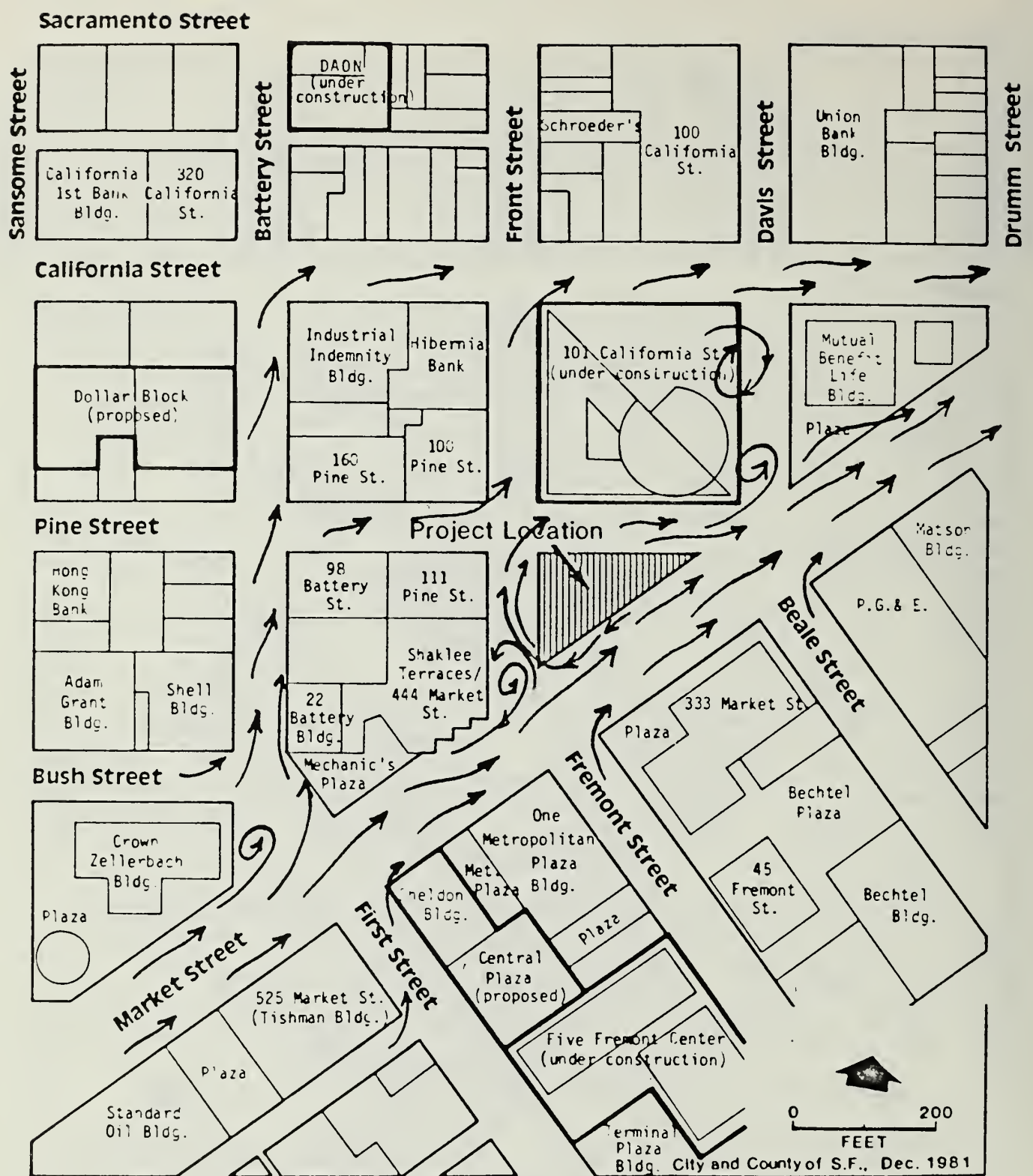
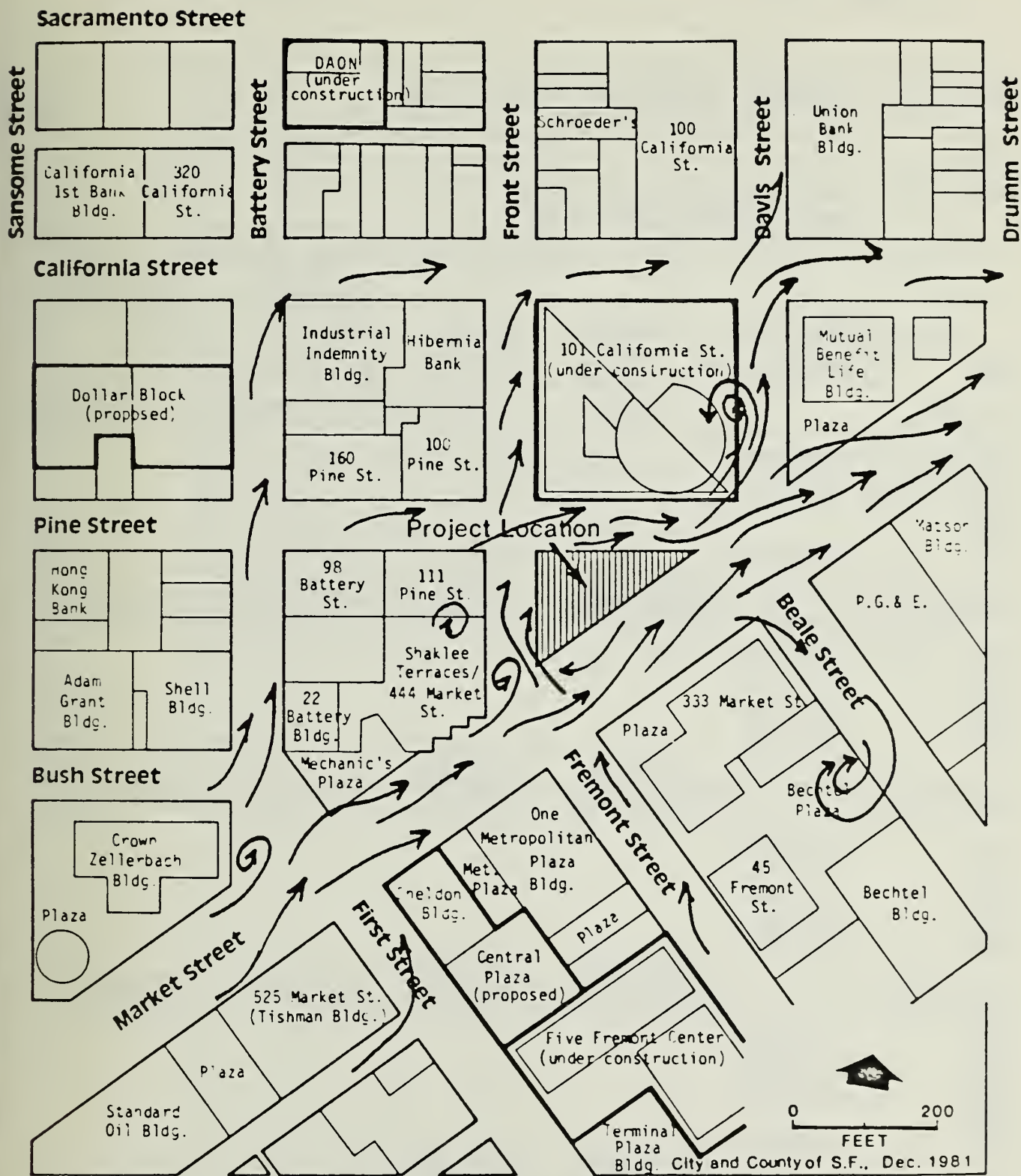


FIGURE B14: Wind Flows for Southwest Wind - Existing Conditions

SOURCE: Environmental Science Associates, Inc.



Legend



Project Location



Sites Under Development

FIGURE B15: Wind Flows for Southwest Wind - Project and Alternative One

SOURCE: Environmental Science Associates, Inc.

APPENDIX C: EMPLOYMENT, HOUSING AND FISCAL FACTORS

● TABLE C-1: MAJOR OFFICE BUILDING CONSTRUCTION IN SAN FRANCISCO THROUGH 1981, IN GROSS SQUARE FEET

Year	Total Gross Sq. Ft. Completed	5-Year Total	5-Year Annual Average	Cumulative Total of All Office Buildings	Cumulative Total of All Downtown Office Buildings
Pre-1960		(Net)(a)	(Net)(a)	28,145,000(b)	24,175,000(c)
1960	1,183,000				
1961	270,000				
1962	--				
1963	--				
1964	1,413,000				
		2,866,000	573,200		
1960-1964		(2,580,000)	(516,000)	30,725,000	26,754,000
1965	1,463,000				
1966	973,000				
1967	1,453,000				
1968	1,234,000				
1969	3,256,000				
		8,379,000	1,675,800		
1965-1969		(7,541,000)	(1,508,000)	38,266,000	34,295,000
1970	1,853,000				
1971	--				
1972	1,961,000				
1973	2,736,000				
1974	2,065,000				
		8,615,000	1,723,000		
1970-1974		(7,753,000)	(1,550,000)	46,019,000	42,048,000
1975	536,000				
1976	2,429,000				
1977	2,660,000				
1978	--				
1979	2,532,000				
		8,157,000	1,631,400		
1975-1979		(7,341,000)	(1,468,000)	53,360,000	49,389,000
		<u>2-year Total</u>	<u>2-year Average</u>		
1980	1,284,000				
1981	3,029,000				
		4,313,000	2,156,500		
1980-81		(3,881,700)	(1,940,850)	57,241,700	53,270,700

● TABLE C-1: MAJOR OFFICE BUILDING CONSTRUCTION AND CONVERSION IN SAN FRANCISCO AS OF NOVEMBER 1, 1981 (Continued)

TABLE C-1: MAJOR OFFICE BUILDING CONSTRUCTION IN SAN FRANCISCO THROUGH 1981, IN GROSS SQUARE FEET (Continued)

- (a) Net equals 90% of gross. Net new space is added at an increase factor of 90%, since it is assumed that space equal to 10% of a new building is demolished to make land available for the new replacement building.
- (b) Source: San Francisco Downtown Zoning Study, Working Paper No. 1, January 1966, Appendix Table 1, Part 1. For pre-1965, data include the area bounded by Vallejo, Franklin, Central Skyway, Bryant and Embarcadero. Also includes one-third of retail-office mixed use. For post-1964, data include the entire city.
- (c) Gross Floor Space for downtown offices are included for the following functional areas: Financial, Retail, Hotel, Jackson Square, Golden Gateway, Civic Center, South of Market, and Outer Market Street as defined in the cited January 1966 report. For post-1964, the entire area east of Franklin Street is included.

SOURCE: Department of City Planning, August 1, 1982.

TABLE C-2: PROJECTED EFFECTS OF DOWNTOWN OFFICE DEVELOPMENT ON REGIONAL HOUSING MARKETS, 1982-90

	Net Project Demand in 1985		Gross Cumulative Demand 1982 to 1990(c)		Net Housing Stock Growth 1982-1990(d)		Demand as a Percent of Growth, 1982 to 1990	
	No. Households		No. Emp. No. Households		No. Units		Project Cumulative	
San Francisco (a)	40 to 85		9,700 to 25,800	6,900 to 14,300	12,000		0.3 to 0.7	57.5 to 119.2
Peninsula (b) (San Mateo and Santa Clara Counties)	50		11,600	8,900	87,600		0.1	10.2
East Bay (b) (Alameda and Contra Costa Counties)	90		19,300	14,900	111,800		0.1	13.3
North Bay (b) (Marin and Sonoma Counties)	35		7,700	5,900	36,800		0.1	16.0
TOTAL	215 to 260		48,300 to 64,400	36,600 to 44,000	248,200		0.1	14.7 to 17.7

(a) The range of San Francisco employees and households is based on 101 Montgomery Street Final EIR, EE 80.26. Certified May 7, 1981 (15-30% of all employees would reside in San Francisco and 1.4 workers would occupy each household) and "Office Housing Production Program (OHPP) Interim Guidelines," Department of City Planning, January 22, 1982 (40% of all employees would reside in San Francisco and 1.8 workers would occupy each household).

(b) Distribution of employees is based on weighted average of expected employees in Federal Reserve Bank (EE 78.207), 101 California Street (EE 78.27), Pacific Gateway, (EE 78.61), and Crocker National Bank (EE 78.298), from 456 Montgomery Street Final EIR (EE 78.178) p. 167 (18% in the Peninsula, 30% in the East Bay, and 12% in the North Bay). Number of workers per household in these counties is assumed to be 1.3 based on 1980 Census data.

(c) Total office space considered in this analysis is about 16.1 million sq. ft. of net new office space (see Appendix D, Tables D-6 and D-7). The proposed Housing Element (May 1982) estimates San Francisco housing needs from 1980-85 in Table 21A. This estimate, based on the Citizen's Housing Task Force Report, July 21, 1982, shows a need for about 16,000 to 19,000 units. The "needs" estimate uses a similar office development basis, but also includes housing demand generated by other sources in addition to office development and covers the years 1980-85.

(d) Net housing stock growth is based on "Projections 79," Association of Bay Area Governments, January 1980. Projections contained in this document for 1980-1990 were prorated to reflect 1982-1990 net housing stock growth.

SOURCE: Environmental Science Associates, Inc.

● TABLE C-3: HOUSING AFFORDABILITY BY HOUSEHOLD INCOME

Gross Annual Income Per Household or Per Individual	Maximum Affordable Monthly Housing Expenditure*	Housing Cost and Type of Unit			Source
		Monthly Cost**	Type of Unit	(Price)	
\$5,000	\$125				
8,300 (a)	208				
10,000	250				
10,680	267	\$267 -	Census Median Rent		(e1)
11,560	289	289 -	Median Rent, Studio Apartments		(f1)
15,000	375				
18,200	455	455 -	Median Rent, All Units		(f2)
20,000	500				
23,520	588	588 -	Median Rent, 3+ Bedroom Units		(f3)
25,000 (b)	625				
27,300 (c)	683				
30,000 (b)	750				
35,000	875				
40,000	1,000				
40,880	1,022	1,022 -	Lowest House Price (\$95,000)		(g1)
45,000	1,125	1,125 -	Census Median Value (104,600)		(e2)
50,000	1,250				
52,560	1,314				
55,000	1,375				
65,080	1,627	1,627 -	Median House Price (151,203)		(g2)
101,880	2,547	2,547 -	Highest House Price (236,750)		(g3)
300,000 (d)	7,500				

See following page for references.

● TABLE C-3: HOUSING AFFORDABILITY BY HOUSEHOLD INCOME (continued)

- * The Office/Housing Production Program (OHPP) Interim Guidelines (January, 1982) define affordable housing as follows:
rental expenses not exceeding 30% of gross monthly income, adjusted for family size; and home ownership expenses not exceeding 38% of gross monthly income, adjusted for family size, including mortgage payments, property taxes, insurance, and/or homeownership association dues.
 For the purpose of this table, 30% of gross monthly income is used to calculate housing affordability for both renters and owners. For owners it is assumed that 8% of gross monthly income would cover property taxes, insurance, and/or homeownership association dues and other related expenses. No adjustment has been made for family size because family circumstances vary widely.
- ** Monthly housing costs refer to rents and mortgage payments for the housing prices shown in parentheses; sources of rents and house prices are as footnoted. Monthly costs of ownership housing were calculated as monthly mortgage expenses assuming 20% down payment, 30-year mortgage, and 16% interest rate, not including insurance, property taxes, and other related housing costs.
- a. U.S. Bureau of Labor Statistics, March, 1981, "Area wage survey for the San Francisco-Oakland, California Metropolitan Area." \$8,300 was the mean 1980 income of inexperienced file clerks, one of the lowest-paid office occupations listed.
- b. The range of \$25,000 to \$30,000 is assumed to approximate the median annual income of project employees (see discussion of Income, p. 79).
- c. The \$27,300 income figure was derived by inflating the \$16,300 median income of downtown office workers from the 1974 SPUR survey through December, 1981 by 67% using U.S. Bureau of Labor Statistics national wage information for nonsupervisory finance, insurance, and real estate sector employees since 1974.
- d. Montgomery-Washington Building FEIR, 81.104E, certified January 28, 1982. The median salary of wage earners at 601 Montgomery St. was estimated to be \$52,560 and the highest salary for corporate officers \$300,000, according to a 1981 survey.
- e. City Planning and Information Services, "1980 Census Information," March 1982: 1. median rent 2. median noncondominium housing value
 Rental data include residential hotels whose rent levels may be substantially lower than other types of rental dwellings and may therefore have an effect on the median rent.

● TABLE C-3: HOUSING AFFORDABILITY BY HOUSEHOLD INCOME (continued)

- f. Department of City Planning, "Rent Survey," 1980. Median rents are for:
 1. studio apartments 2. all units 3. 3+ bedrooms
 These data are based on a small nonrandom sample of newspaper ads and may not reflect true rental costs.
- g. San Francisco Board of Realtors, "Multiple Sales Service," October 5, 1981. (Annual data on housing sales prices includes all homes listed by the Board of Realtors that were sold from February 11, 1981 to October 1, 1981 in San Francisco):
1. lowest price 2. median price 3. highest price

SOURCE: Environmental Science Associates, Inc.

● CUMULATIVE REGIONAL DEVELOPMENT

Projected cumulative office development in parts of the Bay Area outside of the greater downtown area may have environmental effects. Whether, where, when and in what amounts such development may occur are dependent on a number of factors outside the jurisdiction of San Francisco government agencies. Two such factors are 1) the exercise of zoning, planning and environmental review authority by other jurisdictions and 2) the rate of employment growth throughout the Bay Area.

The following information is provided to describe the possible effects of cumulative office development throughout the Bay Area, and to explain the regional government structure that exists to address those effects.

San Francisco is the center of a nine-county region which has lesser activity nodes in each of the other counties comprising the region. Recognizing the interdependence of each part of the region, local jurisdictions have entrusted regional planning, and implementation of adopted policy measures where appropriate, to regional agencies. Responsibility for the comprehensive regional plan is vested in the Association of Bay Area Governments (ABAG), the agency which forecasts regional growth. The Metropolitan Transportation Commission (MTC) is responsible for coordinating regional transit and vehicular plans and policies. The Bay Area Air Quality Management District (BAAQMD) is responsible for maintaining and improving adherence to air quality standards. These and other regional agencies coordinate their planning and implementation activities on issues of mutual concern.

Long-range planning by the regional planning entities, and planning and implementation by operating agencies, such as the Golden Gate Bridge, Highway and Transportation District, have enabled the Bay Area to absorb the growth that occurred between 1960 and 1981. The continued effectiveness of these agencies in guiding and managing growth depends on their ability to anticipate and prepare acceptable policies for future regional needs, and on the capability of the operating agencies to implement policies.

Within this regional planning framework, development is proposed in each of the region's nine counties. The regional agencies review comprehensive plans for individual jurisdictions and large development proposals that are subject to environmental review under CEQA to determine their conformance to approved regional plans.

Regional housing projections, prepared by ABAG, are presented in Appendix C, Table C-2, p. 299. The housing projections, and other ABAG projections of population and employment contained in Projections 79 (ABAG, January 1980), are based on assumptions concerning demographic and economic trends, local land use policies, and transportation infrastructure. Between 1980 and 1990, total Bay Area population and employment are expected to increase by 564,500 and 314,700, respectively. According to Projections 79, San Francisco resident population is expected to decline by about 9,600, and employment in the City is expected to increase by about 68,500.

The impact analysis in this report focuses on regional facility capacity available within the 1982-1990 planning horizon. Decisions as to when major capacity increases will be needed are made by implementing and operating agencies in the context of planning done by regional agencies.

The amount of physical development that can be absorbed in the Bay Area is constrained by the rate and amount of economic growth. Physical development occurs in response to perceived demand for the type of project to be built; if there is no perceived demand, physical development will not occur. For example, in the 1970s, regional shopping centers were proposed in San Mateo, Foster City and Redwood City. Only San Mateo's Fashion Island was built, because the central Peninsula could support only one additional regional shopping center in the contextual time frame.

Similarly, market forces limit the amount of office space that can be occupied in the Bay Area during a given forecast period because the demand for office space is finite. The amount of office space that can be occupied in the region during this decade is limited by many factors, particularly regional employment growth, which determines demand for office space.

This relationship is important to the understanding of the potential amount of office space in San Francisco and the region; office space accommodates employment, it does not create it. If a large amount of speculative office space were to be built in Oakland, given the projected level of regional employment growth, it would satisfy a portion of the regional demand. The reduction in unmet demand could be accompanied by a lessening in the rate of development, an increase in the amount of vacant space, or both. Not all of the proposed office space in San Francisco, for example, would be built or, if it were built, it would not be fully occupied. (This effect would be limited somewhat by demand for space at the local level, e.g., all companies desiring San Francisco office space would not necessarily be satisfied by office space in Oakland.) Vacant office space would not have physical environmental impacts. This report contains a worst-case analysis of cumulative development for downtown San Francisco because it assumes that all projects that are under formal review, approved, and under construction in downtown San Francisco would be built and fully occupied.

Employment growth will be distributed throughout the Bay Area where facilities to accommodate that growth -- including transit systems, infrastructure improvements, office space and housing -- exist, are used most efficiently, or are constructed.

APPENDIX D: TRANSPORTATION

TABLE D-1: VEHICULAR LEVELS OF SERVICE

Level of Service	Description	Volume/Capacity* v/c Ratio
A	Level of Service A describes a condition where the approach to an intersection appears quite open and turning movements are made easily. Little or no delay is experienced. No vehicles wait longer than one red traffic signal indication. The traffic operation can generally be described as excellent.	0.60
B	Level of Service B describes a condition where the approach to an intersection is occasionally fully utilized and some delays may be encountered. Many drivers begin to feel somewhat restricted within groups of vehicles. The traffic operation can be generally described as very good.	0.61- 0.70
C	Level of Service C describes a condition where the approach to an intersection is often fully utilized and back-ups may occur behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so. The driver occasionally may have to wait more than one red traffic signal indication. The traffic operation can generally be described as good.	0.71- 0.80
D.	Level of Service D describes a condition of increasing restriction causing substantial delays and queues of vehicles on approaches to the intersection during short times within the peak period. However, there are enough signal cycles with lower demand such that queues are periodically cleared, thus preventing excessive back-ups. The traffic operation can generally be described as fair.	0.81- 0.90
E	Capacity occurs at level of service E. It represents the most vehicles that any particular intersection can accommodate. At capacity there may be long queues of vehicles waiting up-stream of the intersection and vehicles may be delayed up to several signal cycles. The traffic operation can generally be described as poor.	0.91- 1.00
F	Level of Service F represents a jammed condition. Back-ups from locations downstream or on the cross street may restrict or prevent movement of vehicles out of the approach under consideration. Hence, volumes of vehicles passing through the intersection vary from signal cycle to signal cycle. Because of the jammed condition, this volume would be less than capacity.	1.00

*Capacity is defined as Level of Service E.

SOURCE: San Francisco Department of Public Works, Traffic Division, Bureau of Engineering 1965.



11 Hoffman - Mission St. and S. Van Ness Ave.
 Wednesday, October 21, 1981 - 8:10 A.M. - Inbound

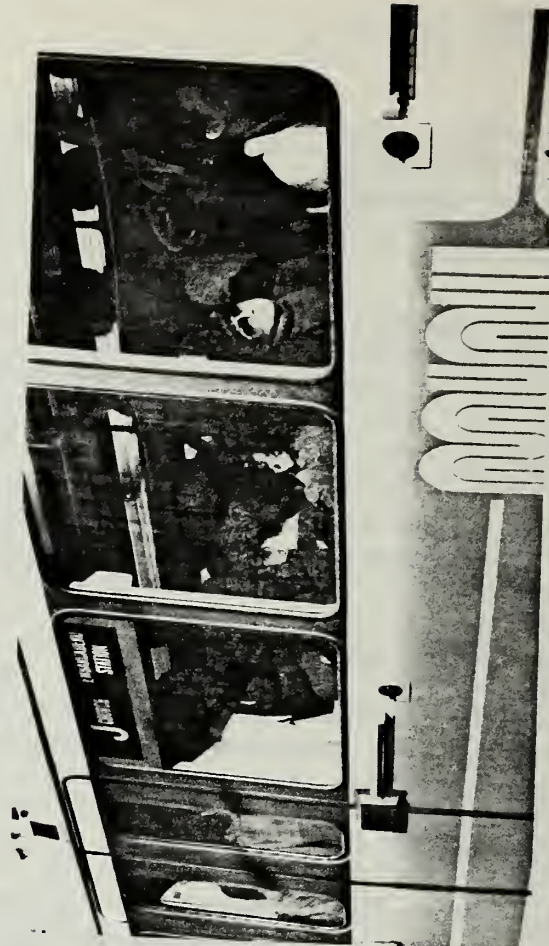


30X Marina Express - Bayshore Ave. and Arieta Ave.
 Wednesday, October 7, 1981 - 8:00 A.M. -Inbound

SOURCE: Environmental Science Associates, Inc.



11 Hoffman - Mission St. and S. Van Ness Ave.
 Tuesday, September 29, 1981 - 5:10 P.M. - Outbound



J Church - Church St. and Duboce Ave.
 Tuesday, September 29, 1981 - 9:00 A.M. -Outbound

FIGURE D-1: Photographs of Peak
 Muni Loading Conditions



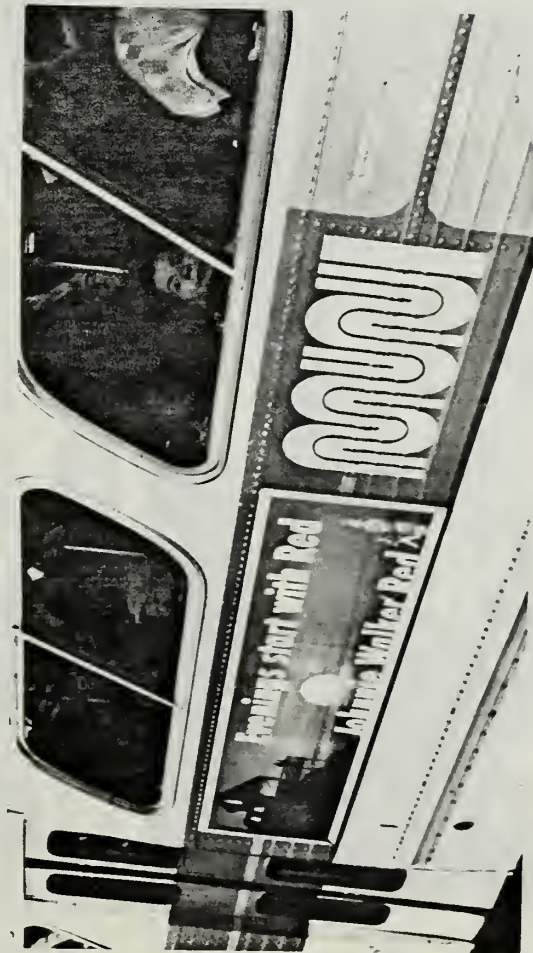
K Ingleside - Van Ness Station

Wednesday, September 9, 1981 - 8:00 A.M. - Inbound



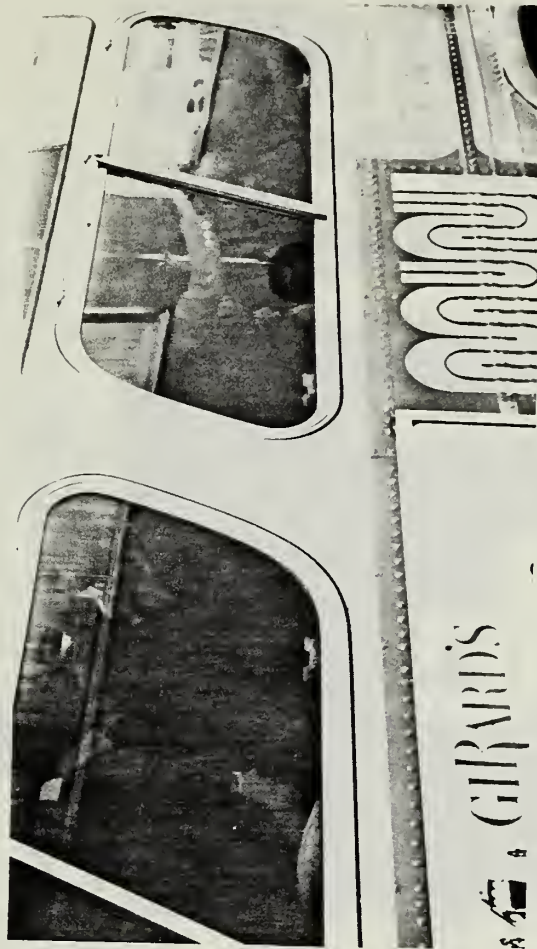
N Judah - Van Ness Station

Wednesday, September 16, 1981 - 5:00 P.M. - Outbound



38 Geary - Van Ness Ave. and O'Farrell St.

Wednesday, October 21, 1981 - 9:00 A.M. - Inbound



38 Geary - Van Ness Ave. and Geary Blvd.

Wednesday, October 21, 1981 - 4:20 P.M. - Outbound

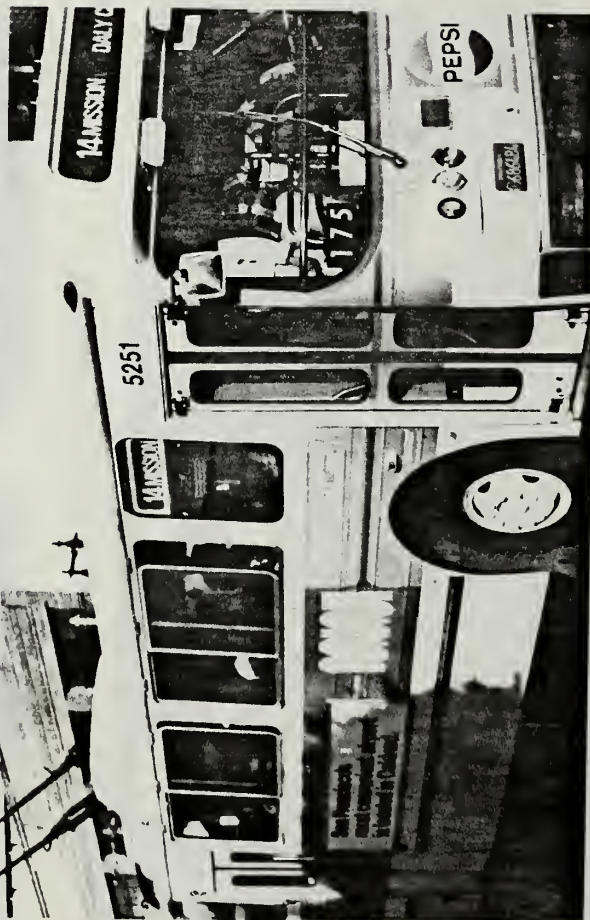
SOURCE: Environmental Science Associates, Inc.

FIGURE D-2: Photographs of Peak
Muni Loading Conditions



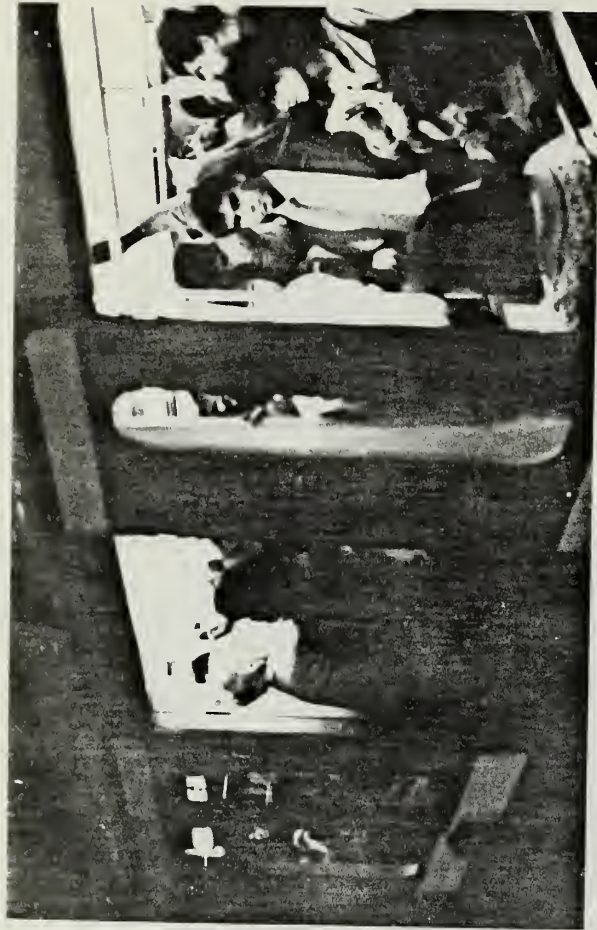
M Ocean View - Civic Center Station

Wednesday, September 9, 1981 - 8:20 A.M. - Inbound



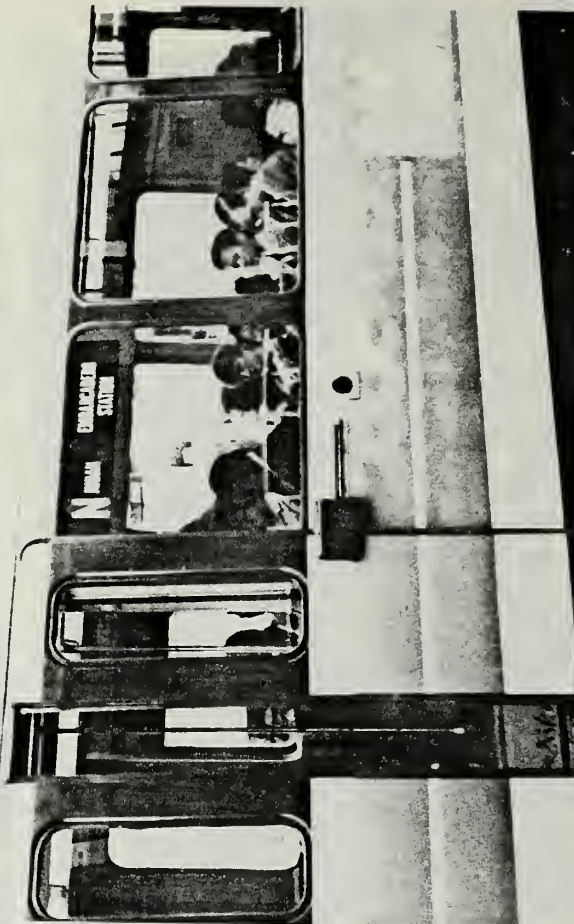
14 Mission - Mission St. and S. Van Ness Ave.

Tuesday, September 29, 1981 - 5:45 P.M. - Outbound



L Taraval - Van Ness Station

Wednesday, September 16, 1981 - 4:50 P.M. - Outbound



N Judah - Irving St. and Ninth Ave.

Tuesday, September 29, 1981 - 8:20 A.M. - Inbound

SOURCE: Environmental Science Associates, Inc.

FIGURE D3: Photographs of Peak
Muni Loading Conditions

TABLE D-2: TRAVEL DISTRIBUTION AND MODAL SPLIT

Geographic Area	OFFICE						RETAIL Travel					
	Work Travel			Other Travel			Geog.			Mode		
	Geog. %*	Mode	%**	Geog. %*	Mode	%**	Geog. %*	Mode	%**	Geog. %*	Mode	%**
San Francisco Downtown/Northeast (East of Van Ness, North of Market to the Embarcadero, South of Market to 101)	7.0	Auto Muni BART Walk	9.0 61.0 1.0 29.0	33.0	Auto Muni Walk	2.0 20.0 0.0 78.0	84.0	Auto Muni BART Walk	3.0 7.0 1.0 89.0			
Northwest (Richmond, Marina Western Addition)	15.0	Auto Muni	31.0 69.0	11.0	Auto Muni	15.0 85.0	1.0	Auto Muni	10.0 90.0			
Southwest (Sunset, Parkside, Ingleside, Excelsior, Twin Peaks, and Upper Market)	13.0	Auto Muni BART	29.0 62.0 9.0	13.0	Auto Muni BART	12.0 69.0 19.0	2.0	Auto Muni BART	10.0 80.0 10.0			
Southeast (Potrero Hill, Bayview, Hunters Point, East and South of 101)	5.0	Auto Muni BART	26.0 52.0 22.0	7.0	Auto Muni BART	13.0 38.0 50.0	2.0	Auto Muni BART	10.0 80.0 10.0			
Peninsula (San Mateo and Santa Clara Counties)	18.0	Auto Muni BART SamT SPRR	44.0 3.0 19.0 7.0 27.0	8.0	Auto Muni BART SamT SPRR	50.0 0.0 30.0 10.0 10.0	3.0	Auto Muni BART SamT SPRR	25.0 0.0 25.0 0.0 50.0			
East Bay (Alameda and Contra Costa Counties)	30.0	Auto BART A-C	33.0 37.0 30.0	20.0	Auto BART A-C	13.0 79.0 8.0	6.0	Auto BART A-C	38.0 62.0 0.0			
North Bay*** (Marin and Sonoma Counties)	12.0	Auto GGTB GGTF	58.0 35.0 7.0	8.0	Auto GGTB GGTF	70.0 20.0 10.0	2.0	Auto GGTB GGTF	70.0 30.0 0.0			

* Percent of total travel with origins or destinations in each geographic area.

**Percent of travel in each geographic area using listed mode of travel.

***GGTB stand for Golden Gate Transit Bus; GGTF stands for Golden Gate Transit Ferry.

SOURCE: San Francisco Department of City Planning, TJKM, Environmental Science Associates.

TABLE D-3: OBSERVED OUTBOUND LOAD FACTORS ON MUNI ROUTES SERVING THE PROJECT AREA BETWEEN 4:30 AND 5:30 PM (Not Peak Loadings on Route) *

<u>Line</u>	<u>Load Factor **</u>
1X	0.5
2	0.2-0.7
7	0.1-0.7
8	0.1-0.7
21	1.0
31	0.1-0.2
31X	0.3-0.7
38AX	0.7
38BX	0.3-0.7
42	0.3-0.7
45	0.2-0.7
71	0.2
72	0.7
L	0.9
M	0.6
N	0.5

* This survey of load factors was conducted on November 2, 1981, of loadings at departure from stops nearest the site.

** The load factor is the ratio of the number of passengers to the recommended maximum. On lines where more than one value was observed, a range of values is given.

SOURCE: Environmental Science Associates.

TABLE D-4: EXISTING AND PROJECTED MUNI LOAD FACTORS*
(PM PEAK HOUR -- OUTBOUND DIRECTION)

Line	RIDERSHIP				LOAD FACTORS			
	Existing	Future w/o project	Future project	Future w/project	Existing	Future w/o project	Future w/project	Future project
PM PEAK HOUR OUTBOUND MUNI ANALYSIS FOR 388 MARKET AT PINE								
TOTAL PROJECT RIDERS = 155.								
1	1453	1962	5	1967	0.93	1.26	1.26	0.01
1X	640	874	2	876	1.11	1.52	1.52	0.01
2	474	666	1	667	1.10	1.54	1.54	0.01
3	520	704	2	706	1.08	1.47	1.47	0.01
4	467	633	1	634	1.08	1.46	1.47	0.01
5	981	1503	3	1506	0.94	1.44	1.44	0.01
6	544	833	2	835	0.84	1.29	1.29	0.01
7	407	624	1	625	0.77	1.18	1.18	0.01
8	657	1007	2	1009	0.74	1.14	1.14	0.01
9	468	717	1	718	0.89	1.36	1.36	0.01
11	184	281	1	282	0.64	0.98	0.98	0.01
12	451	691	1	692	0.85	1.31	1.31	0.01
14	1038	1591	3	1594	0.92	1.41	1.41	0.01
14GL	205	313	1	314	0.71	1.09	1.09	0.01
14X	344	486	1	487	0.68	0.96	0.97	0.01
15	632	927	2	929	0.88	1.29	1.29	0.01
17X	162	219	1	220	0.64	0.87	0.87	0.01
21	643	985	2	987	0.85	1.30	1.31	0.01
27	145	205	0	205	0.58	0.81	0.81	0.01
30	1415	1948	4	1952	0.92	1.27	1.27	0.01
30X	435	592	1	593	0.86	1.17	1.18	0.01
31	657	941	2	943	1.07	1.54	1.54	0.01
31X	413	564	1	565	0.96	1.30	1.31	0.01
32	476	620	1	621	0.79	1.03	1.03	0.01
38	1963	2747	6	2753	1.01	1.41	1.42	0.01
38AX	453	619	1	620	1.26	1.72	1.72	0.01
38BX	272	371	1	372	0.96	1.32	1.32	0.01
41TC	119	167	0	167	0.41	0.58	0.58	0.01
41MC	184	258	1	259	0.43	0.60	0.60	0.01
42	393	596	1	597	0.99	1.50	1.51	0.01
45	561	759	2	761	0.90	1.22	1.22	0.01
66L	555	743	2	745	0.77	1.03	1.03	0.01
71	447	685	1	686	1.10	1.68	1.68	0.01
80X	416	588	1	589	0.83	1.17	1.17	0.01
J	909	1393	3	1396	0.84	1.28	1.28	0.01
KLMN	5725	8771	18	8789	0.96	1.47	1.47	0.01

*The load factor is the ratio of ridership to existing capacity, where capacity is calculated from the recommended maximum seated and standing loading of the transit vehicles. This is 150% of seated capacity, except for LRV's where maximum is 220% of seated capacity. As estimates of load factors, these should be regarded as approximate. Muni cordon points, where the ridership and capacity counts were made, do not necessarily correspond precisely to the point of maximum loading on each line. The future load factors have been calculated using existing capacity and do not include any proposed capacity increases.

SOURCE: Department of City Planning; Environmental Science Associates, Inc.

● TABLE D-5: LIST OF PROPOSED PROJECTS WITHIN 2000 FT. OF THE SITE, INCLUDED IN THE CUMULATIVE ANALYSIS OF LOCAL VEHICULAR TRAFFIC, TRANSIT AND PEDESTRIAN EFFECTS, AS OF AUGUST 6, 1982.

Projects Under Formal Review 8/6/82

<u>Assessor's Block</u>	<u>Case No.</u>	<u>Project Name</u>
228	81.610ED	569 Sacramento (C)
240	81.705ED	580 California/Kearny
265	81.195ED	388 Market at Pine
269	81.132ED	Russ Tower Addition
288	81.461ED	333 Bush
288	81.687ED	222 Kearny/Sutter
3707	81.492ED	90 New Montgomery
3707	81.245C	New Montgomery Pl.
3708	81.493ED	71 Stevenson
9900	81.63	Ferry Building Rehab

Approved Projects 8/6/82

206	81.165D	401 Washington at Battery
227	80.296	Bank of Canton
261	81.249ECQ	333 California
262	81.206D	130 Battery
267	81.241D	160 Sansome
268	81.422D	250 Montgomery at Pine
311	82.120D	S.F. Federal
3709	81.113ED	Central Plaza
3715	82.16EC	121 Steuart
3717	80.349	Spear/Main (160 Spear)
3717	82.82D	135 Main
3722	81.417ED	144 Second at Minna
3738	DR80.5	315 Howard

Projects Under Construction 8/6/82

196		736 Montgomery
196	CU79.49	Pacific Lumber Co.
208	81.104EDC	Washington/Montgomery
237	DR80.6	353 Sacramento (Daon)
239	DR80.1	456 Montgomery
240	DR80.16	550 Kearny
263	CU79.12	101 California
287	81.550D	Sloane Building (C)
288	DR80.24	101 Montgomery
289	81.308D	One Sansome
292	DR79.13	Crocker National Bank
3708	80.34	25 Jessie/Ecker Square

Projects Under Construction 8/6/82 (continued)

3709	80.36	Five Fremont Center
3712	79.11	Federal Reserve Bank
3715		141 Steuart
3717	79.236	101 Mission at Spear
3717		150 Spear
3718	79.12	Pacific Gateway

(C) = Conversion (generally industrial and/or warehouse to office)

SOURCE: Department of City Planning.

● TABLE D-5A: GROSS SQUARE FEET OF CUMULATIVE OFFICE AND RETAIL DEVELOPMENT WITHIN 2000 FEET OF OF THE SITE AS OF AUGUST 6, 1982

<u>Status of Project</u>	<u>Office (Gross Sq. Ft.)</u>		<u>Retail (Gross Sq. Ft.)</u>	
	<u>Total New Constr.</u>	<u>Net New Constr.</u>	<u>Total New Constr.</u>	<u>Net New Constr.</u>
Under Formal Review	2,579,300	2,231,900	166,450	123,450
Approved	2,528,700	2,017,450	59,100	47,260
Under Construction	<u>6,520,800</u>	<u>6,205,100</u>	<u>232,650</u>	<u>108,450</u>
GRAND TOTALS	11,628,800	10,454,450	458,200	279,160

SOURCE: Department of City Planning.

● Travel Demand

Travel demand from the 16.1 million gross square feet of net new cumulative office development and 535,000 gross square feet of net new cumulative retail development in downtown San Francisco has been estimated using a land-use approach for trip generation. Future travel into the downtown has been assumed to be a result of construction and occupancy of downtown office and retail space. The Office of Environmental Review of the Department of City Planning (DCP) has identified office projects in the greater downtown area as being under formal review, approved or under construction. Table D-6 shows the list of projects separated by review status and includes

● TABLE D-6: CUMULATIVE* OFFICE DEVELOPMENT IN DOWNTOWN SAN FRANCISCO AS OF AUGUST 6, 1982

Projects under Formal Review 8/6/82

<u>Assessor's Block</u>	<u>Case No.</u>	<u>Project Name</u>
58	82.234ED	Roundhouse
112	81.258	Ice House Conversion (C)
136	81.245	955 Front at Green
176	81.673	Columbus/Pacific Savoy
228	81.610ED	569 Sacramento (C)
240	81.705ED	580 California/Kearny
265	81.195ED	388 Market at Pine
269	81.132ED	Russ Tower Addition
270	81.175ED	466 Bush
288	81.461ED	333 Bush (Campeau)
288	81.687ED	222 Kearny/Sutter
669	81.667ED	1361 Bush (C)
716	81.581ED	Polk/O'Farrell
3702	81.549ED	1145 Market
3703	81.494ED	1041-49 Market
3707	81.492ED	90 New Montgomery
3707	81.245C	New Montgomery Pl.
3708	81.493ED	71 Stevenson
3733	82.29E	832 Folsom
3760	81.386	401 6th
3776	81.59	Welsh Commons
3778	81.630ED	548 5th/Brannan
3781	82.99E	Greyhound Bus Terminal
3786	82.33E	655 5th/Townsend
3789	82.31EV	615 2nd/Brannan (C)
9900	81.63	Ferry Building Rehab
9900		Pier One Development
9900		Agriculture Building

Approved Projects 8/6/82

106	81.415ED	1299 Sansome
161	80.191	Mirawa Center
164	81.631D	847 Sansome
164	81.573D	50 Osgood Place
166	CU81.7	222 Pacific (C)
166	80.15	750 Battery

(continued on next page)

Approved Projects 8/6/82 (continued)

<u>Assessor's Block</u>	<u>Case No.</u>	<u>Project Name</u>
206	81.165D	401 Washington at Battery
227	80.296	Bank of Canton
261	81.249ECQ	333 California
262	81.206D	130 Battery
267	81.241D	160 Sansome
268	81.422D	250 Montgomery at Pine
271	81.517	453 Grant
271		582 Bush
294	82.870	44 Campton Place
311	82.120D	S.F. Federal
351	DR79.24	Mardikian/1170-1172 Market
3512	82.14	Van Ness Plaza
3518	81.483V	291 10th St.
3705	80.315	Pacific III Apparel Mart
3709	81.113ED	Central Plaza
3715	82.16EC	121 Steuart
3717	80.349	Spear/Main (160 Spear)
3717	82.82D	135 Main
3722	81.548DE	466 Clementina (C)
3722	81.417ED	144 Second at Minna
3724	81.102E	Holland Ct. (C)
3729	82.860	774 Tehama
3733	81.2	868 Folsom
3735	80.106	95 Hawthorne (C)
3738	DR80.5	315 Howard
3741	82.203C	201 Spear
3749	81.18	Marathon - 2nd & Folsom
3751	77.220	National Maritime Union
3752	77.220	Office Bldg. (YBC SB-1)
3763	81.287V	490 2nd at Bryant (C)
3763	81.381	480 2nd at Stillman (C)
3775	81.147V	338-340 Brannan (C)
3776	81.693EV	539 Bryant/Zoe
3788	81.296Z	690 2nd/Townsend (C)
3787	81.306	252 Townsend at Lusk
3789	81.552EV	625 2nd/Townsend (C)
3794	81.569EV	123 Townsend
3803	81.244D	China Basin Expansion

Projects under Construction 8/6/82

163	81.1	901 Montgomery
164	81.251D	936 Montgomery-(disco)
167		Golden Gateway III
196		736 Montgomery
196	CU79.49	Pacific Lumber Co.
208	81.104EDC	Washington/Montgomery

(continued on the next page)

Projects under Construction 8/6/82 (continued)

<u>Assessor's Block</u>	<u>Case No.</u>	<u>Project Name</u>
237	DR80.6	353 Sacramento (Daon)
239	DR80.1	456 Montgomery
240	DR80.16	550 Kearny
263	CU79.12	101 California
287	81.550D	Sloane Building (C)
288	DR80.24	101 Montgomery
289	81.308D	One Sansome
292	DR79.13	Crocker National Bank
312	79.370	50 Grant
351	79.133	U.N. Plaza
762		Opera Plaza
3702	81.25	1155 Market/8th
3708	80.34	25 Jessie/Ecker Square
3709	80.36	Five Fremont Center
3712	79.11	Federal Reserve Bank
3715		141 Steuart
3717	79.236	101 Mission at Spear
3717		150 Spear
3718	79.12	Pacific Gateway
3724		Yerba Buena West
3735		Convention Plaza

* Includes all office projects in the greater downtown area and the south of Market area for which a Preliminary Draft EIR has been submitted to the City for review or for which plans are well defined and all office projects in redevelopment areas that are under construction or for which Land Disposition Agreements have been approved. It does not include projects in Rincon Point - South Beach or Yerba Buena Center Redevelopment Areas for which no Land Disposition Agreements have been approved by the San Francisco Redevelopment Agency Commission, as it is not possible to know what development will be approved in these areas. It does not include Mission Bay as no formal proposal has been submitted to the City. See Appendix D for further discussion.

** (C) - Conversion (generally industrial and/or warehouse to office). Refer to Appendix D for discussion of which projects were included in this list.

SOURCE: Department of City Planning.

Assessor's Block number and DCP case number for each project. Table D-7 contains the total gross square feet of office and retail space for each review status category. The information contained in these tables represents the best data available from the Department of City Planning at the time of preparation of this document.

● TABLE D-7: GROSS SQUARE FEET OF CUMULATIVE OFFICE AND RETAIL DEVELOPMENT* IN DOWNTOWN SAN FRANCISCO AS OF AUGUST 6, 1982

<u>Status of Project</u>	<u>Office (Gross Sq. Ft.)</u>		<u>Retail (Gross Sq. Ft.)</u>	
	<u>Total New Constr.</u>	<u>Net New Constr.</u>	<u>Total New Constr.</u>	<u>Net New Constr.</u>
Under Formal Review	4,220,970	3,801,570	310,650	249,150
Approved	5,428,350	4,862,600	187,850	150,310
Under Construction	<u>7,753,050</u>	<u>7,427,350</u>	<u>260,250</u>	<u>136,050</u>
GRAND TOTALS	17,402,370	16,091,520	758,750	535,510

* Includes all office projects in the greater downtown area and the south of Market area for which a Preliminary Draft EIR has been submitted to the City for review or for which plans are well defined and all office projects in redevelopment areas that are under construction or for which Land Disposition Agreements have been approved. It does not include projects in Rincon Point - South Beach or Yerba Buena Center Redevelopment Areas for which no Land Disposition Agreements have been approved by the San Francisco Redevelopment Agency Commission, as it is not possible to know what development will be approved in these areas. It does not include Mission Bay as no formal proposal has been submitted to the City. See Appendix D for further discussion.

SOURCE: Department of City Planning.

The list of projects shown in Table D-6 and the development totals shown in Table D-7 include all office projects in the greater downtown area and the south of Market area that are under construction or have been approved, and all projects for which a Preliminary Draft EIR has been submitted to the City for review or for which plans are well defined, and all office projects in redevelopment areas that are under construction or for which Land Disposition Agreements have been approved by the San Francisco Redevelopment Agency Commission. Projects that were not definitive and/or appear to be inactive or withdrawn by the project sponsor were not included in the cumulative analyses.

Hotel projects have not been included in the cumulative analyses because hotel uses have different peaking characteristics from office buildings and generally do not significantly affect peak-hour traffic or transit. Residential projects have not been included because residential travel in the downtown is generally in the contra-commute direction during peak-hours and because the office trip generation rate and modal split distribution are predicated on the assumption that housing would be available in the City. Thus inclusion of residential projects would be double counting of project generated travel.

Two redevelopment areas (Yerba Buena Center and Rincon Point - South Beach) and one private development (Mission Bay) are located in or near the greater downtown area. In the redevelopment areas the majority of building sites do not yet have Land Disposition Agreements (LDA) approved. Until such time as specific LDA's are approved, no estimate of travel demand can be made (thus, parcels for which no LDA exists have not been included in the cumulative analyses). Development in the Yerba Buena Center (YBC) Redevelopment Area will be in accordance with the YBC Redevelopment Plan, as amended. Possible land uses that would be in accordance with the Yerba Buena Center Redevelopment Area Plan include commercial entertainment, convention facility (in place), cultural, downtown support service, exhibit/ballroom space, hotel rooms, institutional, light industry, market-rate dwelling units, subsidized dwelling units, office, park or plaza, pedestrian concourse, parking and, retail./3/ Possible land uses in the Rincon Point - South Beach Redevelopment Area include hotel, housing, office, open space, public parking, retail and, warehouse uses./4/ Mission Bay has not been included in the cumulative analyses as no application has been submitted to the City and it is uncertain what formal proposal may be made.

Existing office and retail space that would be replaced by new buildings was subtracted from the proposed new construction to better approximate the impacts the new buildings would have on transportation facilities. As shown in Table C-2, net new office and retail space is less than total new construction as a result of subtracting out existing office and retail space on sites proposed for new buildings. "Net new" space is used to refer to the amount of new construction in excess of existing space on each site in terms of gross square feet of floor space. It does not refer to net leasable or net rentable floor space).

Estimates of future travel have been made using trip generation rates of 17.5 person trip ends (one way trips) per 1,000 net leasable square feet of net new office space and 100 person trip ends (pte) per 1,000 gross square feet of net new retail space./1/ Gross square feet of office space was converted to net leasable square feet by assuming an efficiency factor of 80%. The retail space has been assumed to be primarily "ground-floor retail" which would serve the office building users. Based upon survey data collected at the Embarcadero Center, approximately 45% of the travel generated by "ground-floor retail" uses has been assumed to be oriented to the office uses on-site and is already included in the office trip generation rate. Thus, 55% of the retail trip generation has been assumed to be "new" to each site./2/

P.M. peak-hour travel from the cumulative development was assigned to modes of travel based upon the regional distribution and modal split shown in Table D-1. During the p.m. peak hour about 20% of the office travel and 10% of the retail travel was assumed to occur. Of the office travel approximately 90% [during peak-hours] was assumed to be work-related and 10% was assumed to be other travel. On a daily basis, office travel was assumed to be 57% work-related and 43% other travel./5/

To calculate vehicle trip ends, average automobile occupancies were assumed for each regional area based upon available data. Currently, commute travel to the East Bay is about 1.8 persons per vehicle; the north Bay is about 1.5 persons per vehicle; and to the Peninsula is about 1.2 persons per vehicle./6/ San Francisco auto occupancy was assumed to be 1.4 persons per vehicle./7/

A basic assumption in all of the transportation analyses is that existing regional distributions and modal splits would continue into the future unchanged. Thus, the implicit assumption has been made that about 40% of the future employees would live in San Francisco. If housing is not available in the City then a greater impact than noted would result on the commute corridors into the City from the North Bay, East Bay and Peninsula. If housing is not available in the City, however, the impact on the MUNI would be less than noted because City residents are the majority of Muni users.

Long-term parking demand was based upon the number of expected work-related auto trips into the downtown. Parking supply was estimated over the greater downtown and South of Market area as travel time from parking space to final destination was no longer assumed to be the primary determinant for parking selection.

Vehicle travel and parking demand have been based upon demand projections and are unconstrained by the ability of the freeway and bridge system to carry the additional demand. Freeway and bridge capacity into downtown is essentially fixed at existing levels as major construction would be required to add new capacity. Current levels of vehicle traffic on the freeway and bridge system are at or near capacity. Thus, if the projection of person trip ends in autos is assumed to be correct, the levels of vehicle occupancy would have to increase in the future as the freeway and bridge system could not handle the increase in single-occupant autos. If vehicle occupancy were to increase, vehicle trip ends and subsequent parking demand would be less than projected. Alternately, the peak hours level of demand could spread into hours adjacent to the peak hour (as is currently happening). However, there is a finite limit as to how far the peak can spread over time and still allow business to function.

Transit demand has been projected based upon existing travel patterns and is not dependent upon the availability of transit capacity. Two levels of operations (load factor) calculations have been made. One load factor has been calculated based upon existing capacity and is intended to represent conditions that would result if no improvements are made to the transit system. The second load factor is calculated based upon forecast capacity (as defined in each agency's five-year plan) and is intended to portray conditions that would result if planned, scheduled improvements are made. Table D-8 relates projected ridership to capacity of the outbound p.m. peak hour service on the various transit agencies.

● Employment Trend Approach to Cumulative Analysis

In this and other San Francisco EIRs, a land-use type of approach has been used to estimate employment and the resultant transportation impacts of both the proposed project and cumulative development. An alternate type of approach is to forecast travel demand based upon regional projections of employment share (employment trend approach).^{/8/} Briefly, the fundamental differences between (and limitations of) the two approaches are:^{/9/}

The land-use approach (as it has been applied in this EIR) has used net new office space actually proposed or under construction (less space in buildings demolished to make way for new buildings) as the basis for travel generation.

The land-use approach assumes that literally all of the currently proposed development in the downtown area will be constructed and fully occupied within the time frame of the 388 Market St. project development and occupancy. No allowance has been made for less than 100 percent occupancy, for proposed developments that are never constructed, or for those which would not be occupied within the time frame of the 388 Market St. project.

The employment trend approach generates a total increase in employment in downtown that has taken account of loss of employment as industries and offices move out of the City, replacement of one type of industry with another (industry shifts), as well as, replacement of existing office space with new office space. The employment trend approach makes no implicit assumptions concerning occupancy rates or actual square footage of development constructed; rather, it generates total employment increases from a standpoint which assigns jobs by metropolitan sector (area) based upon extrapolation of past trends and which considers long-term industry shifts to, within, and away from each area.

Note that neither of the two approaches has attempted to project future changes in modal split.

To illustrate the differences in projections resulting from the two approaches, Table D-9, following, shows the total employment projections by the two methods (and the project's share thereof), the regional distribution of trips, and Muni's share of the new transit travel (and the project's share thereof).

TABLE D-8: AFTERNOON PEAK HOUR OUTBOUND TRANSIT RIDERSHIP

Agency	RIDERSHIP		LOAD FACTOR (Existing Capacity)*			LOAD FACTOR (Proposed Capacity)**	
	Existing	Existing plus Cumulative	Existing	Existing plus Cumulative	Existing plus Cumulative plus Project	Existing plus Cumulative	Existing plus Cumulative plus Project
	Existing	Existing plus Cumulative	Existing	Existing plus Cumulative	Existing plus Cumulative plus Project	Existing plus Cumulative	Existing plus Cumulative plus Project
Muni***	25,810	37,695	0.90	1.32	1.32	1.11	1.11
BART							
Transbay	13,600	18,900	0.90	1.25	1.25	0.76	0.76
Westbay	6,445	9,220	0.61	0.88	0.88	0.56	0.56
A-C Transit	9,560	13,260	0.72	0.99	0.99	0.99	0.99
SamTrans	1,700	2,250	0.78	1.03	1.03	0.36	0.36
SPRR	5,180	7,220	0.78	1.10	1.10	1.10	1.10
Golden Gate							
Motor Coach	4,510	6,290	0.66	0.92	0.92	0.73	0.73
Ferry	800	1,180	0.39	0.57	0.57	0.33	0.33

*Load factor based upon existing (recommended) maximum capacity. A load factor of 1.00 is equivalent to 100% of recommended seated and standing capacity being used. Recommended maximum capacity is less than "crush" loadings that occur occasionally.

** Proposed capacity as specified by each agency's Five-Year Plan.

*** 1982 Muni ridership is approximate based on a compilation of Muni ridership by the Department of City Planning and Office of Environmental Review.

SOURCE: Environmental Science Associates, Inc.

● TABLE D-9: COMPARISONS OF LAND-USE AND EMPLOYMENT TREND APPROACHES

Approach	Downtown		Regional Trip Share				Muni Peak-hour Increase**	Project Share***
	Employment Increase	Project Share*	S.F.	Pen.	E.B.	N.B.		
Land Use	64,400	0.5%	49%	16%	24%	11%	12,000	0.7%
Empl. Trend+ (maximum)	56,100	0.6%	50- 54%	19%	17- 21%	10%	12,900++	0.6%

NOTE: As explained in the text, comparisons between the entries for the two approaches must be made with the understanding that the land-use approach reflects increases in employment and transit demand based solely upon increases in downtown office space, while the employment trend approach reflects total increases therein based upon historical trends. The differences among the regional trip share figures reflect these and the other differences between the two approaches.

*Employment generated by the proposed 388 Market St. project, as a percent of the cumulative downtown employment increase.

**The Muni peak-hour increase is a demand projection (based upon existing and long-term employment trends) that is not dependent upon available or expected transit capacity.

***Muni peak-hour trips generated by the proposed 388 Market St. project, as a percent of the cumulative downtown Muni peak-hour increase.

+These figures, represent the worst-case analysis under the employment trend approach reviewed and accepted by MTC, ABAG and Muni.

++Based on 54 percent regional trip split to San Francisco (worst-case).

As shown in the table, the employment trend approach predicts about 15 percent fewer employees in the downtown and about eight percent more riders on the Muni than does the land-use approach. The employment trend approach would thus approximate the transit demand impacts discussed in Section IV. D, Transportation Impacts.

Several considerations concerning both of the methods need to be noted. The land-use approach, as it has been applied in San Francisco EIR's, analyzes impacts for the p.m. peak hour, whereas the employment trend approach analyzes the a.m. peak. Several reasons exist as to why one peak (or the other) may be the better one to analyze.

First, the p.m. peak may be more useful to analyze, in that actual observation shows that the p.m. peak has a greater overall effect on the local street network and transit system in the downtown area than does the a.m. peak, as more travel takes place during the p.m. peak. Also, transit service is more inclined to differ from scheduled times during the p.m. peak than during the a.m. peak, as operational delays have had an 8- to 10-hour period over which to accumulate. Finally, the on-ramps to the freeway/bridge system are greater bottlenecks (in the p.m. peak) than are the off-ramps (in the a.m. peak).

Conversely, the peaking characteristics of the a.m. peak may be more useful in that they are much sharper than those of the p.m. peak (i.e., a greater percentage of the peak-period travel occurs during a single hour). Also, as a result of the bridge system into San Francisco, travel inbound into the City is much easier to document, as tolls are collected on the inbound direction on the Golden Gate and Bay Bridges. Finally, a greater proportion of the travel occurring during the a.m. peak is employment-related; the p.m. peak also includes shopping and pleasure trips which are not directly affected by increased office space.

The land-use approach, as it has been used in this document, examines the p.m. peak because it has been observed to be the worst case for congestion on the City transportation system. This analysis does not reflect the spreading of the p.m. peak that is currently occurring, as all of the new trips have been assumed to take place in a single hour.

While the land-use approach assumes all new office space is fully occupied, the assumption of a functional vacancy rate of 5 percent is not uncommon./8/ With 16.1 million square feet of new office space assumed in the land-use approach to be occupied by 1990, a 5 percent vacancy would amount to approximately 805,000 square feet, representing 7,200 employees (at 250 square feet per employee), 600 of which would ride Muni in the p.m. peak hour. This adjustment for vacancy would thus reduce Muni peak-hour impacts in the cumulative analysis stated above by these 600 riders.

The land-use approach calculations have assumed transit capacity to be fixed at existing levels. The OER memorandum/8/ points out, "It should be recognized that transportation is a more 'elastic' resource with many options for expansion including increasing existing capacity by using articulated vehicles, expanded car pool and van pool programs and increasing the peak commuter period through flex-time programs, among others."

If future office development does not occur along the lines of the past long-term trends as assumed in the employment trend approach, then the projections made in Working Paper I would be revised. The average annual growth during the period 1965-1980 was less than the growth per year proposed, approved, or under construction for the period 1980-1984. The employment trend approach assumes average growth through 1990 would be at the lower historic rate, reflecting activity fluctuations from the current rate including slowdowns due to changing business conditions.

Until a forecast exists to determine how the current decade's cycle of development may differ from the past, a judgment of the applicability of results from Working Paper I may not be made. Consequently, this EIR has retained the land-use approach and presented this comparison of the employment trend approach. Both methods should be looked upon as describing potential scenarios of future conditions.

● TABLE D-10: CUMULATIVE PEDESTRIAN IMPACTS ON ADJACENT SIDEWALKS*

Sidewalk	Effective Width	Pedestrian Volumes **		Pedestrian Flow Rates***		Percent of Capacity Used****	
		Existing	Cumulative w/o Project + Project	Existing	Cumulative w/o Project + Project	Existing	Cumulative w/o Project + Project
Front St.	10 ft.	37	90	3.7	9.0	20	50
Market St.	18 ft.	28	96	1.6	5.3	10	30
Pine St.	8 ft.	8	11	1.0	1.4	10	10

* 101 California St. will be the major source of cumulative pedestrians that will impact sidewalks adjacent to the project. The paths that these pedestrians will use was projected using paths that seem most probable. The actual sidewalk conditions resulting from cumulative development would not be qualitatively different from the sidewalk conditions represented in this table.

** Persons per minute.

*** Persons per effective foot of sidewalk width per minute.

**** Rounded to nearest 10%; maximum capacity is 18 persons per effective foot of width per minute.

SOURCE: Analysis performed by Environmental Science Associates, Inc., following methods described in the book Urban Space for Pedestrians, by Boris Pushkarev and Jeffrey Zupan.

● TABLE D-11: PEDESTRIAN FLOW REGIMEN

FLOW REGIME	CHOICE	CONFLICTS	FLOW RATE (P/F/M)*	
			Average	Percent of Capacity Used
Open	Free Selection	None	0.5	0.0-3.0
Unimpeded	Some Selection	Minor	0.5-2	3.1-11.0
Impeded	Some Selection	High Indirect Interaction	2-6	11.1-33.0
Constrained	Some Restriction	Multiple	6-10	33.1-56.0
Crowded	Restricted	High Probability	10-14	56.1-78.0
Congested	All Reduced	Frequent	14-18	78.1-100.0
Jammed**	Shuffle Only	Unavoidable		above 100.0

* P/F/M = Pedestrians per foot of a effective sidewalk width per minute.

** For Jammed Flow, the (attempted) flow rate degrades to zero at complete breakdown.

SOURCE: Urban Space for Pedestrians, Boris Pushkarev and Jeffrey Zupan, MIT Press, 1975, Cambridge, MA.

NOTES

/1/ Land uses from Draft Second Supplement Yerba Buena Center Final Environmental Impact Report, San Francisco Department of City Planning May 28, 1982

/2/ Land uses from Rincon Point - South Beach Redevelopment Area, San Francisco, California, Final Environmental Impact Report/Environmental Impact Statement, San Francisco Department of City Planning certified November 5, 1980.

/3/ The regional distribution, office trip generation, trip purpose and peak hour percentage are from Attachment 1 of the Guidelines for Environmental Impact Review, Transportation Impacts Department of City Planning, October 1980 and the modal split assignment is from Attachment 2 supplemented by survey data collected by Environmental Science Associates, Inc.

/4/ Retail trip generation is from Trip Generation, Institute of Transportation Engineers (ITE), 1979. Rates have been adjusted from vehicle trip ends to person trip ends based upon an assumed vehicle occupancy of 1.4 persons per vehicle. The survey of retail travel was conducted by

Environmental Science Associates at Embarcadero Center on Thursday, June 17, 1982 between 10:00 a.m. and 4:00 p.m.

/5/ The percentage of work and non-work trips is from the Guidelines (see note 1) and from Urban Travel Patterns for Hospitals, Universities, Office Buildings, and Capitols, Report No. 62, National Cooperative Highway Research Program.

/6/ East Bay auto occupancy is from data collected at the Bay Bridge toll plaza by the Metropolitan Transportation Commission; North Bay auto occupancy is from data collected at the Golden Gate Bridge toll plaza by the Golden Gate Bridge, Highway and Transportation District; Southern Peninsula auto occupancy is an estimate from CalTrans.

/7/ The occupancy rate is from The Downtown Traffic and Parking Study, San Francisco Department of Public Works, 1970.

/8/ Department of City Planning, Working Paper I, Projection of Long-range Transportation Demand, May, 1982, prepared in cooperation with the Metropolitan Transportation Commission (MTC), the Association of Bay Area Governments (ABAG), and the Municipal Railway (Muni). Employment trend data was compiled by ABAG from trends in County Business Pattern (U.S. Department of Commerce, Bureau of the Census, March 12, 1979), with 1979 as the base year for future projections and regional distributions. Modal split data are from the 1975 Travel Survey prepared by MTC.

/9/ The Department of City Planning, Office of Environmental Review (OER), has issued a memorandum, dated July 2, 1982, dealing with the subject of the differences in the land-use and employment trend approaches, and recommending that both approaches be used in future EIRs to give a more balanced assessment of future peak transportation demand. This memorandum is on file with and available from the Office of Environmental Review, 450 McAllister St., 5th Floor. The memorandum calls out some of the fundamental differences between the two approaches and also details the limitations of each approach.

APPENDIX E: AIR QUALITY

TABLE E-1: SAN FRANCISCO AIR POLLUTANT SUMMARY 1978-1980

STATIONS: 939 Ellis Street and 900 23rd Street, San Francisco*

POLLUTANT:	STANDARD	1978	1979	1980*
OZONE (O ₃) (Oxidant)				
1-hour concentration (ppm /a/)				
Highest hourly average	(0.08) 0.12 /b,c/	0.11	0.08	0.09
Number of standard excesses		(4) 0	0	0
Expected Annual Excess/c/		0.3	0.0	0.0
CARBON MONOXIDE (CO)				
1-hour concentration (ppm)				
Highest hourly average	35 /b/	17	20	10
Number of standard excesses		0	0	0
8-hour concentration (ppm)				
Highest 8-hour average	9 /b/	9.4	13.8	7.5
Number of standard excesses		1	2	0
NITROGEN DIOXIDE (NO ₂)				
1-hour concentration (ppm)				
Highest hourly average	0.25 /d/	0.30	0.16	0.17
Number of standard excesses		4	0	0
SULFUR DIOXIDE (SO ₂)				
24-hour concentration (ppm)				
Highest 24-hour average	0.05 /d/	0.024	0.034	0.018
Number of standard excesses/e,f/		0	0	0
TOTAL SUSPENDED PARTICULATE (TSP)				
24-hour concentration (ug/m ³ /g/)				
Highest 24-hour average	100 /d/	128	117	173
Number of standard excesses/f/		1	1	6
Annual concentration (ug/m ³)				
Annual Geometric Mean	60 /d/	42	42	52
Annual standard excess		No	No	No
LEAD				
Calendar quarter concentration (mg/m ³)				
Highest quarterly average	1.5 /b/	1.19	0.95	0.53
Number of standard excesses		0	0	0

* In January 1980 all of the pollutant-monitoring functions of the 939 Ellis St. Station were transferred to the 900 23rd St. Station.

Table E-1 (continued)

/a/ ppm: parts per million.

/b/ National standard, not to be exceeded more than once per year (except for annual standards which are not to be exceeded).

/c/ The national ozone standard was revised from 0.08 ppm to 0.12 ppm in January 1979. The number of excesses shown in parentheses is of the old 0.08 ppm standard in effect at the time. Expected Annual Excess is a three-year average of annual excesses of the new 0.12 ppm standard.

/d/ California standard, not to be equaled or exceeded.

/e/ The sulfur dioxide standard is considered to be exceeded only if there is a concurrent excess of the state ozone or suspended particulate standards at the same station. Otherwise, the national standard of 0.14 ppm applies.

/f/ Number of observed excess days (measurements taken once every six days).

/g/ ug/m^3 : micrograms per cubic meter.

SOURCE: BAAQMD, 1978 - 1980, Contaminant and Weather Summaries.



